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Address.

THE IMPORTANCE OF GENERAL THERAPEUTICS IN THE TREATMENT OF OCULAR DISEASES.*

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In offering a few thoughts on "The Importance of General Therapeutics in the Practice of Ophthalmic Medicine and Surgery," I wish to sketch in broad outline what is in my mind, and to leave each of you to fill in the details of the picture from your own experience. It is to the principles which guide, more than to the means to be employed, that I desire to direct attention; for although the treatment of disease is to a very large extent empirical, the discoveries made in physical, as well as in physiologic and chemical, laboratories are slowly but surely placing the subject on a more scientific basis, and showing in many instances that so far from empiricism being opposed to rational therapeutics, the two have many points of contact and are indeed interdependent.

For most men it is easier to put trust in authority than to exercise independent judgment; and so, instead of thinking for themselves, they accept a clearly expressed opinion as a scientific fact, or even mistake a mere impression for a real opinion. Many of the therapeutic measures so much in vogue at present, radium, *x*-rays, currents of high potential, etc., etc., are purely empirical, and the routine employment of these forces, of whose real properties we at present know so little, seems rather to be a reversion to the old idea of the supernatural origin of disease than to be founded on a due recognition of its natural causes. Doubtless these means are full of promise, and the investigation of the ray world that extends on either side of the narrow limits of the visible spectrum may reveal mysteries of which, at the present moment, we can form merely a very faint idea; but at this stage of the study it can only bring discredit on ourselves and on our methods to make such an assertion as that, under the influence of ultra-violet or any other rays, "cancers are cured."

While it must never be forgotten that treatment is an art, and is none the less valuable because it is empirical, yet the whole trend of modern progress is to appeal less and less to authority. We endeavor in all things to go to Nature direct and by patient research to find out her secrets. Investigation of this kind demands much time and labor, and the life of man is short and his mental and physical capacity for work limited. If any real advance is to be made, the extent of the subject and the briefness of existence make subdivision of labor necessary, and specialism is thus the natural outcome of increase of knowledge. It is an inevitable result of evolution, and as an ideal ought to be symbolic of the highest form of efficiency.

This tendency to specialize is observable in every branch of inquiry, in philosophy, in politics, in engineering, in music and in literature, as well as in medicine, and the organs of special sense have always been looked on as furnishing legitimate subjects for special study. Among these, ocular investigation has ever held a foremost place. The tissues of the eye are so delicate, its structure so complicated, and its diseases so numerous and so frequently followed by disastrous results that there is little wonder that oculists have existed from time immemorial. In the early days, however, these men had no claim whatever to be called specialists. They possessed, doubtless, a certain amount of special manual dexterity, but the majority of them were charlatans of the very worst description, practicing on the eye exclusively because they were wholly ignorant of the general principles of medicine and of surgery. A specialist in the true sense of the word is one who has conscientiously studied the body as a whole, and the highest and best type is he whose anatomic and physiologic knowledge is most perfect, and whose early training has fitted him to take broad and comprehensive views of pathology. For all efficient higher training there must be a proper foundation, and consequently the specialist in medicine must combine in himself the diagnostic skill of the physician with the dexterity of the surgeon, and must add to these the special knowledge that gives him power and action reaching still farther along his own particular line.

Few, very few, can reach such an ideal, but all can honestly and strenuously strive to attain it.

As a result of the subdivision of labor, our knowledge in every department of medicine has increased so enormously that the study and practice of any one branch is more than sufficient to occupy the time and tax to the utmost the energies of the ordinary man. We can not, like the great masters in the past, cultivate a specialty and at the same time engage in general practice. The field is too wide. Nevertheless, if specialism is to render the highest service to the world, it must of necessity be based on an efficient system of general instruction; and consequently it is incumbent on every specialist to strive, by reading, by frequent visits to the wards of a general hospital, and by conversation with colleagues, to keep in touch with the progress of pathology, along at least its most important lines of advance. One of the besetting sins of the present age, however, is hurry, and if a man specializes too early he is apt to specialize more

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than he ought, and to cultivate his own department to the neglect of all others.

An exclusive interest of this kind leads to narrow and distorted views whereby the part is magnified out of all true proportion to the whole, and, the sense of proper perspective being lost, judgment is biased and opinion becomes untrustworthy. Doubtless concentration of thought along a single line will tend to improve the power of special diagnosis, but it interferes in many cases with the ability to take a comprehensive view of the whole morbid process.

It follows, therefore, that, although the specialist may devise new means of local treatment, or improve methods of operative technic, there is a risk of his doing so without regard to the broad principles which underlie all rational therapeutics. It must not, however, be supposed for a moment that I would underestimate the value of local treatment; to do so would be to run counter to all the knowledge of the process of inflammation which we have gained through the study of bacteriology. What I desire to emphasize is the need for assigning to local treatment no more than its proper value. It is just possible that the great amount of consideration given in recent years to the study of micro-organisms has tended to divert attention unduly from the soil on which the bacteria grow.

For example, if an ulcer form on the cornea of a healthy man the probabilities are that it can easily be cured by local treatment; whereas, if the ulcer occur in an unhealthy person micro-organisms are not confined to the seat of injury, but are found, along with their toxins, both in the tissues and in the blood; consequently, if a speedy recovery is to be brought about, there must be general as well as local treatment. In the one case it might be said that the cornea was injured, but in the other that the patient was diseased, and that the ulcer of the cornea is only a symptom of his unhealthy state. Success or failure will depend on a proper distinction between these two conditions.

The researches of Pasteur and their practical application by Lister and his followers, by making successful operative interference possible in so many cases from which the surgeon had hitherto been debarred, gave a great stimulus to surgery as a whole, and with it to the surgery of the eye. In spite, however, of all our precautions and of our most careful attention to antiseptic methods, eyes are still occasionally lost by suppuration after operative interference.

As in the days prior to the introduction of antiseptic treatment, the failures are in cases where there has been previous inflammation of the conjunctiva or tear passages, or in which the patient's vitality is low. General malnutrition is as great an obstacle to success as it ever was, and the necessity for action along this line suggested by clinical observation is borne out by the results of theoretical and experimental research so ably dealt with in Professor Welch's Huxley Lecture of 1903.

"The struggle," says Dr. Welch, "between the bacteria and the body cells in infection may be conceived as an immunizing contest, in which each participant is stimulated by its opponent to the production of cytotoxins hostile to the other, and thereby endeavors to make itself immune against its antagonist."

When the body is healthy it possesses the power of producing substances specifically antagonistic to all sorts of micro-organisms, but with this power any morbid state at once interferes; and as in all infections, whether local or general, "abnormal metabolism is an essential condition," patients of low vitality will be in such a state that the substances produced, so far from being antagonistic to parasitic organisms, may actually stimulate their growth.

This being so, one must not only endeavor to render the field of operation sterile, but must also devote the utmost care and attention to what is of equal importance—the giving the patient himself increased power of resistance. Good food, fresh air, rest, every means of strengthening digestion, are all essential. Should the sufferer be a poor man, who has been unfit for work for several months, and through poverty unable to procure a sufficient amount of food, he will require special care, since his tissues will be in the condition most favorable for the action of even the slightest infective taint, and also for the rapid spread of suppuration. While, therefore, every attention must be paid to strict antiseptic precautions at the time of the operation, equal care should be bestowed on the state of the patient himself, especially if he be poor and habitually ill-nourished. Were the health of these broken-down subjects better looked after prior to cataract and other operations there would be fewer failures from suppuration.

The comparative safety of modern surgical procedure has brought with it certain disadvantages. The immediate and often brilliant results following operations offer a strong temptation to run a certain amount of risk in cases where the slower but perhaps surer methods of general therapeutics are to be preferred. For example, in dealing with patients showing symptoms resulting from heterophoria, very frequently tenotomy is performed, or a rectus muscle is advanced, whereas no such procedure should be undertaken until every opportunity has been given for the recovery of the balance of muscular power by promoting an improved condition of general health. The ease and safety with which an operation can be performed tempt one to employ it as a first remedy when it should rightly be used only as a last resort.

From what has been said, it will be seen that the great advances in ophthalmic surgery have gone on *pari passu* with those of general surgery, and that both are the direct result of the labors of those who have worked out the practical applications of the science of bacteriology. So also is it true that similar advances in the treatment of diseases of the eye can be attained only by a careful study of the principles of general pathology. There can be no special study of morbid conditions in the eye apart from special postmortem appearances incident to peculiarities of anatomic structure. Nor could we expect it to be otherwise, when we remember how quickly sight is affected in all disordered states of the body, and how frequently actual pathologic changes occur in the ocular tissues as consequences of general ailments. As Paget said long ago, "No disease can be properly understood unless it be considered in its whole pathology."

Happily, modern pathology is much more than a record of postmortem appearances. It deals not only with structure, but also with function, and thereby takes cognizance of the origin and course, as well as of the results, of a morbid process. Its whole trend is to demonstrate, what has all along been known to the clinical observer, that a disease can cure itself. This all-sufficient power of Nature to bring a patient back from sickness to health is the very first lesson in rational therapeutics. It is recorded of Sydenham that when he was in doubt he consulted his own reputation and the patient's safety by doing nothing at all. Doubtless this expectant treatment can be carried too far; but probably most of you will agree that many eyes are lost from injudicious med-

dling which might have been saved had they been left to Nature. The wonderful powers possessed by the natural restorative agencies of the living body were, and are still, spoken of as the "constitution," or the "*vis medicatrix naturæ*"; but these words, although they encouraged a physician to hold his hand, and in consequence oftentimes saved a patient from the discomforts, and even the dangers, of what has been called active treatment, are nevertheless simply cloaks for ignorance.

The new nomenclature which is arising in connection with the study of infection and immunity is, however, promising to provide us with a means of expressing ourselves intelligibly regarding the manner in which Nature works. The chain theory of Ehrlich has provided a working hypothesis for the investigation of the phenomena associated with the great problem of life and death. Just as the strength of a chain is measured by its weakest link, so must the resisting power of the body be estimated by the vitality of its constituent cells.

An organ may, to every form of physical examination, appear quite sound, and yet may break down quickly and completely under the strain of any infectious disease. There is inherent corpuscular weakness, and consequently the ultimate appeal must always be to the individual corpuscle. If this be granted, there is no difficulty in explaining the shortsightedness that sometimes occurs as a sequela of measles or scarlet fever, or the destructive choroiditis associated with the progressive myopia that is occasionally met with in the children of agricultural laborers, whose open air life ought, in the absence of inherent weakness of the tissues, to have effectually prevented the onset of such a condition.

On this theory, then, the organic life of the individual is simply the aggregate of the corpuscular life, and the more intimate our knowledge of the changes taking place in the cells of the body, the more surely shall we, in the cure of diseases, be able to bring the resources of art to the assistance of Nature. The hypothesis leads us further, for it raises the all-important question: Could the vital resistance not be so much strengthened that disease would be prevented?

Undoubtedly prophylaxis is the highest form of therapeutics, and of late, both by the cultivation of sanitary science and by the practical demonstration of the use of antitoxins in the treatment of diseases, great advances have been made in this direction. The study of the former, by bringing prominently forward the laws governing health, teaches not only individuals, but also whole communities, the value of an abundant supply of fresh air and of pure water, combined with a perfect system of drainage; while the latter has shown that the blood, when it is supplied with a quantity of a specially prepared serum is reinforced by those very constituents of which it was most in need, and without which the recovery of the patient was impossible.

The study of antitoxins is as yet in its infancy, and so far we possess specifics of this kind antagonistic to only a few diseases; but there is no reason to doubt that with the advance of science and the increase of knowledge serum treatment will come to bulk more and more largely in medical practice; until, perchance, we may at length be provided with a serum whose use at the right time will prevent that greatest of all ocular dangers, sympathetic ophthalmia.

Dealing still with the inner corpuscular life of the body, we are reminded that the full activity of the muscle corpuscle is essential to health, and this affords a ready explanation of the great importance of both active and passive exercises in so many different morbid conditions. In my own experience there is nothing of more value in checking the progress of myopia in the young than a well-regulated course of Swedish gymnastics, and what is true of myopia is equally true of every form of ametropia.

It is not enough, more especially when one is dealing with children, simply to adjust glasses suitable for the correction of the error of refraction. A quick estimate must at the same time be made of the patient's general strength, for it is most important to remember that, though the demand for work made on the ciliary muscle may not be unreasonably great in itself, yet it may be altogether excessive in relation to the individual in whom it is made. While, therefore, the error of refraction must always be carefully corrected, so that the ciliary muscle may do its duty under the best possible conditions, every effort should also be made to develop and strengthen the whole muscular system by sufficiency of proper food, by drill, by exercise on the bicycle, or, preferably, on horseback, and by an active outdoor life.

In the eye, just as in any other part of the body, the limits of muscular capacity must be respected, and the amount of work to be done must be adjusted accordingly. How often do patients suffering from lack of nerve energy try to rest and read at the same time; for example, when invalids read in bed! They are attempting the impossible. The aching eyes and headache of which they usually complain are evidently due to nervous and muscular fatigue, and when there is any error of refraction, the ciliary muscle, already weary, becomes quite incapable of meeting the call on it.

Day after day at the Glasgow Ophthalmic Institution I see children sent from the poorest schools of the city by their teachers "to get spectacles." In nearly every case an error of refraction exists, but in many it is so slight that in all probability it would cause no trouble were the general health satisfactory. Most of these children are underfed, live in unsanitary houses, are the victims of unwholesome habits, and are in consequence physically unfit to bear the strain of continuous school work. Obviously, under these circumstances, it is wiser to prescribe rest for the eyes than to supply glasses, which by the relief they afford encourage the child to struggle, only to have afterward, under the stress and strain of preparation for the government inspection, a more serious breakdown.

It follows, then, that I have no sympathy whatever with those who desire to separate optical from medico-surgical ophthalmology. Such a divorce is most irrational, for under no circumstances can the living eye be treated simply as an optical instrument. The fitting of spectacles is neither a mathematically exact process nor in itself a complete remedy. As the late Dr. John Brown, the gifted author of "Horæ Subsecivæ," said, "the watch must be mended while it is going." The eye is not only in the body, but it is also of the body, and the proper treatment of its optical defects requires the physician's skill just as much as does the treatment of its diseases.

On the other hand, it can not be insisted on too often, or too strongly, that all these optical defects should be corrected early and thoroughly, for eye strain is accompanied by symptoms as numerous as they are varied, and its persistence is in consequence attended by grave dangers to the general health. The highest ideal of one profession is to discover and deal with all the causes of a disease, and these can only be found through a thorough knowledge of pathology. The more limited, therefore, the pathologic outlook the more deficient will be

the general treatment, and so it follows that therapeutics to be rational must be founded on an accurate knowledge of the natural history of the ailment.

According to this view, disease can not be regarded as a morbid entity which for the time being has taken possession of the body, and of necessity must be removed by means of powerful remedies. On the contrary, it must be looked on as a natural process gone wrong, and the physician is the guide who, confident in himself and full of the discretion and self-reliance begotten, and only begotten, of a power of accurate observation, pilots the sick man through the malady and brings him back to health. Whenever it is recognized that disease is due to the perversion of natural processes the path to its prevention or relief is at once made easier, for it is obvious that the very first indication for treatment is to maintain, or to improve, the nutrition of the body. The patient must be supplied with food of proper quality and in sufficient quantity to satisfy his needs.

As, however, the food, after passing through various preparatory changes, must be assimilated before it can be utilized for the nourishment and the repair of the various tissues and organs, there must, for satisfactory nutrition, be a healthy state of the tissues themselves; the blood supply must be of good quality and in sufficient quantity, the nervous system must exercise a proper controlling influence, and heat and light must be present in abundance. No doubt some corpuscles, more especially leucocytes, inherit from the parent cell and possess, uncontrolled by any nervous influence, the power of absorbing nourishment from the blood; but it is certain, so far as the fixed corpuscles are concerned, that disturbance of innervation lowers nutrition and lessens the power of resistance to the attacks of micro-organisms. In support of the statement that in many instances the nerves exercise a trophic influence over the tissues, it is only necessary to mention blepharitis, associated with errors of refraction; keratitis, the accompaniment of zona ophthalmica, or ulcer of the cornea following the extirpation of the gasserian ganglion.

Existing contemporaneously with the process of assimilation, there is also always a process of excretion. The corpuscles take up their food supply from the blood or from the lymph, absorb what they require and reject the surplus, and throw off the effete materials.

If the health of the cell is to be maintained at a proper standard provision must be made for the complete elimination of these waste products, for if they be retained in the blood a state of general toxemia will soon supervene, and this, if it persist for a considerable time, even to a slight extent, will, by lowering the state of the corpuscular health, seriously interfere with the resisting powers of the body as a whole. If, therefore, the nutritive value of the blood is to be maintained at the normal, it is imperative that all toxins be removed at the earliest possible moment, and to this end Nature has made provision in the bowels, the liver, the kidneys, the skin and the lungs. The constant and free activity of these channels of excretion is essential to health, and if, by reason of illness, the function of one be temporarily interrupted, the others are always ready to undertake vicarious duty.

A very short clinical experience will, however, prove that the full functional activity of any one, e. g., the skin, is under certain circumstances of more value than the combined activity of all the others. For example, in the early stages of diseases of the uveal tract a mercurial purge and alkaline saline draughts stimulate the liver, bowels and kidneys, and their administration is often attended by the most satisfactory results; whereas, in inflammation of the optic nerve, of retrobulbar origin, relief is more quickly obtained by free diaphoresis; and in toxic amblyopia, due to the abuse of alcohol and tobacco (the causes of the trouble having been removed and digestive disturbances corrected by appropriate means), vision returns most speedily under the strengthening influence of a sea voyage or of a sojourn in the dry, bracing air of the mountains, conditions in which the blood receives a plentiful supply of oxygen. One of the most familiar examples of the evil result of improper feeding accompanied by defective elimination is found in *phlyctenular conjunctivitis,* and I therefore select the treatment of this disease as a practical illustration of what I have been saying.

The sufferers from strumous ophthalmia are very numerous, and are for the most part children under 10 years of age. Although some of them may present the outward appearance of good health, most of them are, owing to defective assimilation and excretion, either abnormally pale, or unnaturally livid. They have but too obviously inherited the miserable legacy of constitutional weakness; and the inherent vulnerability of their tissues has been intensified by improper dieting and by overcrowding in unsanitary houses. They are called scrofulous, but as yet there are no symptoms to show that the tubercle bacillus has effected a lodgment; and careful examination fails, as a rule, to discover it lurking in the conjunctival sac, although it is in children such as these that one would expect to find this micro-organism developing and increasing most rapidly. The Germans speak of them as "candidates for tuberculosis," and the increase of lymphocytes, together with the deficient supply of multinuclear leucocytes, in the blood, mark them out as badly protected against any form of infection.

The eye trouble very often follows an attack of measles or other of the exanthemata, and although under favorable circumstances it may speedily subside, it has a most characteristic tendency to recur, unless every cause be taken in hand from the very outset. If left alone, or simply treated by local remedies, the ophthalmia often proves to be the very first warning of the imminent danger of tubercular infection. This is especially likely to happen in those patients in whom photophobia is most distressingly persistent, although lesions of the conjunctiva or of the cornea are at first absent, or are of a very trivial character.

It is by no means unusual for the conjunctivitis to alternate with suppuration of the middle ear, or with eczematous eruptions on the head or other parts of the body. Nutrition is seriously interfered with, and the coated tongue studded with large red papillæ shows the irritable condition of the mucous membrane of the whole intestinal tract. There is sometimes a constant craving for food, and almost invariably more is eaten than can be digested; fermentation results, the belly is distended, and the alvine evacuations have an offensive smell and an unnatural appearance. The urine is high colored, deposits urates, and often contains traces of sugar. The skin is pale and rough, the flesh hangs loosely on the bones, the hands and feet are often persistently cold, and the head perspires freely.

After a time the system becomes infected by tubercle bacilli, and then the joints, both large and small, are very frequently destroyed by tubercular inflammation of their synovial membrane and caries and necrosis of the bones. Severe ectropion, causing hideous disfigurement, will arise if the bone necrosis occur in the neigh-

borhood of the orbit, and indelible scars invariably result if there be suppuration of the lymphatic glands in the neck and elsewhere.

Unless the cornea has, through neglect, become ulcerated, local treatment consists simply in keeping the child's face and hands clean, and in applying sedatives to the eyes. The real treatment of the disease is constitutional. It is necessary always to bear in mind that the very essence of the ailment lies in the malassimilation of food, and that most, if not all, cases arise as a result of improper dieting. You may be told that the child pecks and trifles with its food, and eats very sparingly, and that may be quite true so far as the regular meals are concerned; but by careful inquiry you will usually discover that the small appetite at the proper times for eating arises from the patient having been, in response to cries for "a piece," supplied liberally between meals with bread and butter, sweets, fruit or any other eatables that may have chanced to be at hand. Many think that a good appetite is a sign of good digestion, though all the time the latter is so poor that in the overladen bowels toxic substances are constantly being manufactured, and these, after they are absorbed, excite abnormal effects both in the eyes and in all the other tissues of the body.

Instead, therefore, of eating too little, these children eat too much; and, although they may appear ill-nourished, the malnutrition is due to malassimilation rather than to insufficiency of food. The first thing to be done, therefore, in treating a case of phlyctenular conjunctivitis is to give particular directions regarding the diet. The child must not be allowed to eat whenever it cries for food, but ought to be fed at regular intervals. Nor must it get what is among the poor popularly called "the run of the house"; it should have meals specially prepared, and in quantity and quality of such a kind as not to overtax the powers of digestion.

Sugar in every shape and form, fruits, pastries, potatoes, etc., must be rigidly excluded from the dietary, and it is usually advisable to confine the patient wholly to milk and water for the first forty-eight hours of the treatment, and then to add gradually meat soups, eggs, fish, fowl, rice, etc., as the tongue becomes clean.

In addition to the careful supervision of diet, the free elimination of the toxins, which, as a result of malassimilation, have accumulated in the blood, must in every way be promoted. This is to be accomplished by stimulating the action of the kidneys, the bowels and the skin, more especially the last. Hence the importance of the hot bath, which the child should have every night at bedtime, diaphoresis being further encouraged by the wearing of a warm flannel nightgown. It is usually advisable first of all to administer a dose of castor oil; but it should be borne in mind that many of these children do not bear purgatives well, as the intestinal mucous membrane is so irritable that troublesome diarrhea is easily induced.

Of drugs, none is so useful as tartar emetic, which should be given as Mackenzie advised, in slightly nauseating doses. Its chief virtue depends on its diaphoretic action, and its efficacy is greatly increased when it is administered with a laxative, e. g., powdered rhubarb. If the tongue be brown, a few grains of gray powder may with advantage be added to the rhubarb and antimony combination. Under this treatment it is wonderful how soon the whole appearance of the patient changes.

As the power of digestion becomes greater the skin improves in color, the hair loses its dry and brittle character, the hands and feet keep warmer, and the child, instead of lying with its face buried in a pillow, and fretting and crying when spoken to, is now quite good tempered and runs about and amuses itself with its playthings. Any indiscretion in diet will, however, promptly bring on a relapse, for in these cases the conjunctiva reflects the conditions of the gastrointestinal mucous membrane even more quickly than the tongue. After some forbidden food has been eaten, intolerance of light, blepharospasm and increased lachrymation speedily show themselves, while the tongue may not become furred till some days after. The fear of relapse makes it imperative, therefore, that treatment be continued for at least a fortnight after the recovery seems complete.

As soon as possible the child ought to be sent to the country, preferably to a high, dry, bracing locality, and it should live out of doors as much as the weather will permit. The seacoast should be avoided, as the glare from the water is apt to prove irritating to the eyes and to cause a relapse. In an ordinary case of strumous ophthalmia, no further treatment than that just indicated is required. If a case is not making satisfactory progress, careful inquiry should at once be made as to whether the prescribed diet and the nightly warm bath are being strictly attended to.

Whenever the child's powers of digestion, respiration and excretion become healthy, fewer restrictions as to diet are necessary, and a plan of treatment may then be entered on to improve the general nutrition still further, and to promote the repair of any local lesions in the eyes themselves. Such restorative methods aim at supplying the blood with something specially needed at the moment, but if they were to be commenced prematurely they would do much harm by adding to the child's difficulty in assimilating food. In every attempt to assist recuperation the all-important indication is to stimulate appetite and to strengthen digestion by means of simple tonics, and on no account to prescribe iron, phosphates, cod-liver oil or the hypophosphites if the tongue be either coated with fur, or red and irritable.

It is not necessary to discuss this subject further, for the guiding principles applicable in the treatment of phlyctenular conjunctivitis apply with equal force to the general treatment of all eye diseases of constitutional origin.

The first condition of success is to find out what is at the root of the trouble, be it syphilis, gout, rheumatism or anything else, to prescribe appropriate remedies in such dose and state of combination as will suit the individual patient, and then to persevere steadily until the disease be overcome. The all-important point is to make a searching diagnosis early, so that from the first the treatment may be both local and constitutional.

Neglect may bring about complications, and, of course, if the tissues be destroyed, no amount of antisyphilitic, antirheumatic or any other kind of medicine can replace them. In many instances, on the other hand, when, to begin with, the prospects of success are not hopeful, earnest perseverance will accomplish much, while intermittent and unsettled efforts will altogether fail.

What I have just said must be taken as applying to the line of treatment rather than to any particular drug, for it can not be too strongly urged that, no matter how high the reputation a remedy may have, it at once does harm to the individual for whom it has been prescribed if it interfere with his powers of digestion and assimilation of food. It is a matter of common observation that

the sight of those suffering from atrophy of the optic nerve, or from disease of the choroid or retina, deteriorates much and quickly whenever there is gastrointestinal disturbance. He is, as a rule, the most successful practitioner who can at once vary the preparation and the combination of the drugs to suit the peculiarities of the patient, and at the same time never depart from the line of treatment he has laid down for himself.

Such resourcefulness on the part of the doctor is of the greatest value to the patient, and I would add that in medicine, probably more than in any other profession, the personality of the practitioner counts for much. That is where the man himself and his natural endowment tell, but, though this personal power has the obvious advantage of inspiring the patient with hope at a time when the disease may seem to be pressing on with such resistless force that he is beginning to despair, it has the disadvantage that the influence of the doctor dies with him. His successors may model themselves on his manner and methods, but there must always be a difference.

That leads me to say that one of the greatest hindrances to a proper study of therapeutics is the ease with which remedies are supplied to the doctor by the manufacturing chemist. These drugs, the products of the chemical laboratory, are advertised largely, and are said to effect so much good that there is a great temptation to try them, and if, perchance, urgent symptoms disappear after their use they are only too apt to be employed indiscriminately. The mixtures so supplied are elegant and palatable, and the pills, tabloids, etc., are very convenient and easily swallowed; but it is only when he writes his own prescriptions that the practitioner can make himself so thoroughly familiar with the properties of drugs, that he is at once able to vary his formula to suit the needs and idiosyncrasies of an individual patient. There is much to be said in favor of the apprenticeship system in medical training, for with drugs, as with all other things, you can never know them properly until you have handled them and dispensed them.

Assimilation, elimination and recuperation embody the great principle underlying all rational therapeutics, but before concluding I must refer briefly to rest, in so far at least as it is an aid to nutrition. During tranquil sleep the restorative powers of Nature work undisturbed, and in calculating the risks of an operation Paget very wisely emphasized the fact that a patient's capacity for sleep was of the utmost importance.

I do not recollect ever having had serious trouble with an operation case when the patient slept soundly for several hours immediately after being taken back to bed, and in order to induce postoperative slumber it is my usual practice half an hour before the time fixed for the operation to administer a draught containing the triple bromids. On the other hand, when a patient is wakeful and talkative, and keeps constantly tossing about in bed, it is almost impossible for the wound to heal by first intention. Unless means be quickly discovered to keep him quiet, it is usually wiser to remove the bandage and allow him to leave the recumbent position and to sit on a chair, when he may obtain the needful rest. One of the reasons why pain does so much harm after an operation is owing to the restlessness it induces; consequently, if I think there is much chance of a patient suffering, my practice is to give a small dose of morphia hypodermically. This, by ensuring several hours of continuous repose, gives Nature a healing chance of which she is never slow to avail herself to the utmost.

It is not good practice, however, always to subdue pain, for it is, if rightly interpreted, oftener kindly than hurtful. As a rule, it is a danger signal, warning both surgeon and patient of something wrong. For example, if pain recurs some days after a serpiginous ulcer has been carefully cauterized, it is almost certain that reinfection has taken place, and the prompt application of local antiseptics may save much future trouble. The eyelids form natural splints for the eyeball, and close instinctively whenever the globe is injured. This movement not only protects the eye from further harm, but also relieves the patient by keeping him in the dark, the physiologic rest for the eye. As a sequel to diseases of the choroid or of the retina, a cataract frequently forms, and by shutting out light secures rest and gives Nature the opportunity she has been seeking for the repair of the deep-seated mischief; and so successful is she that if, after a time, the cataract be extracted, the visual result obtained is often far beyond our expectations. In the same way atropin, by paralyzing the ciliary muscle, keeps the eye at rest, and few things are more wonderful than the rapidity with which, after the efficient application of the mydriatic, pain is relieved and a turning point is reached beyond which the patient is on the road to perfect restoration to health.

In one of the charming papers of Dr. John Brown, to whom I have already referred, he tells that, when a student asked a celebrated artist how he mixed his colors, he received the unexpected reply, "With brains, sir"; and such an answer is as true in regard to therapeutics as it was under the circumstances which called forth those striking and memorable words. What is wanted in this very advanced age of medicine is not more learning, but the more exact application of what we have. We require to be made more conscious of the power of knowledge properly employed. Our experience teaches us facts, but it is only when, through a study of pathology, we get an explanation of the laws and principles underlying the facts that we can act with a well-defined purpose and can utilize our knowledge in the highest interest of humanity.

Retrospect is always instructive, for it is from the experience and lessons of the past that the requirements of the future may be deduced. And what a past has ophthalmology! When we recall the name of Mackenzie, of von Graefe, of Donders, of Helmholtz, of Bowman, of Critchett, and of your own countrymen, Williams, Agnew, Loring and Norris, what visions of intellectual power, of manful and patient purpose, of earnest effort in the pursuit of truth, of the bright flash of illuminating genius, rise before us!

These founders of modern ophthalmology, these masters of our science, had not our opportunities, but they possessed a thorough grasp of the clinical history of disease, and their strong common sense, begotten of observation and experience, enabled them to see what could be done by art and what was best left alone to Nature. They may have known less than we do, but if antiseptic surgery and the refinements of refraction be excluded, their practice in the treatment of disease was not a whit inferior to that of the present day.

Time would fail, and words are inadequate, to describe what manner of men these were who have adorned our profession and have left us the legacy of their skill and of their characters. Let us remember that we in our turn have a legacy to bequeath, and if we are to hand on to our successors a splendid heritage, still greater and grander than that which we ourselves have received, we must try more and more to be animated by the spirit that inspired the masters of the past, and to seek to work

as did they with singleness of purpose, untiring industry and steadfast faith. "With firmness in the right as God gives us to see right, let us strive on to finish the work we are in," and, while we prove all things, let us see to it that we hold fast only to that which is good.

Original Articles.

THE SANITARY AND MORAL PROPHYLAXIS OF VENEREAL DISEASES.

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It is generally recognized by those who have studied this subject that the prophylaxis of the class of diseases comprehended under the general term "venereal" is the most complex, difficult and baffling of all the problems of social hygiene which confront us at the present day. My object in this paper is simply to indicate the lines along which this prophylactic work should be undertaken and to recommend certain measures which are immediately available and which promise to be effective in limiting, at least, the evil we wish to prevent.

In the first place, it is necessary to clear away certain misconceptions which evidently exist in the minds of many of the medical profession as to the purely sanitary character of this problem. Venereal diseases possess certain peculiarities in their origin and mode of propagation which distinguish them from all other infectious diseases, and our methods of dealing with them must be differentiated from ordinary sanitary methods, and must be adapted with special reference to their mode of communication. Especially would I emphasize the view that these diseases are not merely diseases of the human body; in their essential causes they are diseases of the social organism; their prophylaxis is preëminently a socio-sanitary problem, the only correct solution of which must be sought for in the co-operative effort of all the social forces, educational, moral and legislative, as well as sanitary.

It is hardly necessary to pass in review the extent to which these diseases prevail, their pathologic importance and their dangers to the public health. I may, however, refer briefly to one phase of venereal morbidity of the utmost importance from a biologic standpoint, and which gives to these diseases their superior significance as a social danger.

The distinctive feature of venereal diseases is that they specifically affect the reproductive organs; they damage or destroy the functions through which life is perpetuated, and thus defeat the social aim of marriage —gonorrhea, by its inhibitory influence on the reproductive capacity, and syphilis by its blighting and destructive effect on the product of conception. The important relations of these diseases with marriage have never been sufficiently appreciated, even by the medical profession. Marriage constitutes a favorable culture bed for the germs of syphilis, and is the most prolific source of accidental innocent inoculations. The vast complexus of morbid states, dystrophies and degenerations which make up the pathology of hereditary syphilis, have their almost exclusive origin in marriage. The murderous influence of syphilis on the offspring, often extinguishing in germ the posterity of many families, is well known. Modern science has taught us that gonorrhea is an even more potent factor of depopulation than syphilis. A large proportion of the involuntary or enforced childlessness of many couples is due to gonorrhea. Through the process of parturition, gonorrheal inflammation becomes transformed into a dangerous and even deadly infection. A large percentage of blindness and vulvo-vaginitis of young girls results from the introduction of gonorrhea into marriage.

The extent to which these diseases prevail in married life is much greater than is commonly supposed. Every motive leads to their concealment. I have elsewhere stated my conviction that there is more venereal infection among virtuous wives than among professional prostitutes in this country. I repeat, then, that the chief social danger of venereal diseases comes from their destructive effects on the health and the productive energy of the family. The office of social hygiene is not simply to protect the existing population from disease; it embraces in its objects the welfare of the descendants, those who are destined to continue the race. This protective duty extends to the unborn children, who should not be deprived of their birthright of vitality and physical vigor.

The term "prophylaxis" naturally suggests the intervention of the sanitary officials, who are the accredited representatives of the state in all matters relating to the care of the health of the people, and yet we have in this country the singular spectacle of a large and important class of diseases, dangerous to the public health, a serious menace to the welfare of the family and of the race—diseases which are confessedly contagious, essentially evitable, and yet absolutely ignored by our sanitary officials. What is the explanation of this policy of inaction?

Undoubtedly, one cause is the comparative failure of all methods hitherto employed to materially diminish the spread of these diseases, and the hostility of public sentiment toward the legal recognition of prostitution, which is the chief source of these diseases.

Without entering fully into the consideration of the system of reglementation employed in continental countries, it may be said that it has proved defective as a sanitary scheme and is condemned by its practical results. Beside, it is found that the large proportion of public prostitutes can not be subjected to sanitary surveillance, while the clandestine prostitutes, who are the most active spreaders of contagion, escape its operation altogether. The fatal defect of the system is that it ignores the masculine spreader of contagion.

The sanitary authorities, in dealing with a typhoid epidemic, might as well attempt to sterilize the chief infected water supply while allowing a stream of contamination to be continually pouring in and, at the same time, ignoring thousands of infected private sources of supply constantly poisoning the consumers. As well might the health officer of a port attempt to prevent the importation of plague from an infected vessel by quarantining the infected women and allowing the infected men to go free. It is the unilaterality, or "one-sidedness" of this surveillance, as if the women were the exclusive sources of contagion, which constitutes its essential weakness as a sanitary scheme.

It may be positively affirmed that venereal diseases are not susceptible to the application of the sanitary methods ordinarily employed for the control of contagious diseases. The first essential to the success of any scheme of sanitary control is the co-operation of

the medical profession in reporting all cases of contagious disease coming under their professional care. Now the law requires that every infectious disease, dangerous to the public health, shall be reported to the health officials. Venereal diseases fulfill both these conditions, yet are exempted from obligatory notification. These diseases are protected by their privacy, their secrecy, their shameful character, from notification.

Another method of prophylaxis employed by sanitarians is education. In the presence of an epidemic disease the people are enlightened as to the modes of its communication, the conditions which favor infection, the means of avoiding exposure, etc. In case of a chronic disease, like tuberculosis, the public is informed of its dangers, of the agents by which it is propagated in family and social life, of the risks these agencies carry, and of the best means of avoiding these risks. During the past year over 100,000 circulars conveying such educational information, printed in different languages, were distributed by the health board of New York City. I have approached two successive administrations of the health department of that city and urged the adoption of a somewhat similar method for the diffusion of knowledge respecting the dangers and communicative modes of venereal diseases; but was informed that such information would offend the moral susceptibilities of the community.

It is to be remembered that sanitary methods are based on, or rather determined by, the contagious mode of diseases. The sanitarian does not attempt the impossible task of exterminating the germs of disease; his efforts are directed to preventing the contact of these germs with the healthy. With this view, isolation or separation of the sick from the well is the method ordinarily employed. Isolation of the great army of venereals is not practicable, nor indeed is it necessary, as the bearer of venereal disease is, with ordinary care, innocuous to those with whom he comes in contact in the ordinary relations of life. He becomes dangerous to others only by his voluntary act. Now, the common, habitual mode by which venereal diseases are propagated is through prostitution. Prostitution can not be suppressed by any legal or police force. No sanitary authority can prevent or even touch this contagious mode. Much of it is too private, secret and withdrawn from observation. Another common contagious mode is in the married relation. It is evident that the sanitarian is powerless to interfere with a relation which is essentially private and intrenched in the stronghold of what is regarded as marital rights.

There is, however, one peculiarity in the communicative mode of venereal diseases which distinguishes them from other infectious diseases and which may furnish a clue to lead us out of this labyrinth of difficulties, viz., the fact that they are communicated voluntarily. This specialty of contagious mode takes these diseases out of the category of ordinary infectious diseases which are communicated involuntarily and unconsciously. The man who contracts venereal disease from a prostitute voluntarily exposes himself to contagion. The man who infects his wife and children voluntarily exposes them to contagion. In both cases contagion is effected through the free will and action of the individual. Now, since this voluntary act can not be repressed nor controlled by force, the indications are to bring to bear restraining influences which act on the volition, the will, the morale of the individual.

Unquestionably, the most valuable measure is education. Exposure to these diseases occurs most commonly in the young, the immature, the irresponsible through ignorance. While venereal disease may occur at any period of life, it is essentially a malady of the young. Seventy-five per cent. of all infections in public women occur before the twentieth year; 25 per cent. of all infections in men occur before the twenty-first year. This is the age when "the centers of arrest," as they are termed—judgment, reflection and will—are not developed, an age when the individual is influenced by impulse, imagination and curiosity, before those maturer faculties, which exert an inhibitory influence on the actions, are sufficiently developed.

I doubt whether the impelling influence to initial debauch in young men is the result of animal passion. It is more often curiosity or a desire to prove his virile endowment, often the erroneous idea that sexual indulgence is essential to health.

It is the experience of all medical men that ignorance is responsible for a large proportion of infections in the young, and that enlightenment which would engender a wholesome fear of these diseases would preserve thousands of them from exposure.

This education would not only serve as a preservative against exposure to infection, but it would constitute the most valuable prophylactic measure against its introduction into marriage. The vast majority of men who carry disease and death into their families from uncured venereal diseases do so ignorantly. A general diffusion of knowledge regarding the nature and danger of these diseases, the duration of their contagious activity, and the terrible consequences to their wives and children would be largely instrumental in preventing these social crimes.

There is another aspect of this voluntary exposure which may be properly utilized as a safeguard of marriage. Morally, no human being has the right to communicate his disease to another. When a man, knowing himself to be the bearer of a contagious sexual disease, communicates it to his wife, in the relation established by marriage, this action comes within the operation of that principle of the law which attaches a civil or penal responsibility for injury to another individual through an act "knowingly and wilfully" committed. The man can not plead in extenuation that he had no intent to injure. The law holds that "whoever does an act likely to produce injury and injury follows, can never excuse himself by saying that he hoped a probable consequence might, by some good fortune, not follow." Certainly a man can inflict no graver injury on the pure young woman who receives him as her husband than to poison her with syphilis, which ruins her health and kills her children; or with gonorrhea, which may extinguish her hopes of maternity and render her a lifelong invalid or a subject for the operating table.

It is doubtful whether this principle of jurisprudence could be applied to the communication of disease in illicit relations, in which both parties voluntarily expose themselves to contagion, but in marriage, where the wife is an innocent and unsuspecting victim, and powerless to protect herself against injury, such a law would be equitable and just. It would not only act as a deterrent force, but it would educate the public to an appreciation of the fact that the transmsision of venereal disease is not a venial offense, especially in a relation which it is to the interest of the state to protect and to surround with every possible safeguard.

Assuming, then, that the diffusion of knowledge, especially among the rising generation, respecting sexual hygiene and the dangers and modes of communication of diseases peculiar to sexual life, is the first and most essential condition of any intelligent scheme of prophylaxis, what should be the scope of this instruction, how or through what agencies should it be conveyed, and at what age should it be given? These are questions which require thoughtful consideration.

The medical profession is the repository of the knowledge we wish to convey and the physician is the most competent instructor. Through his personal, as well as his professional, relations with the young men of his clientéle, the physician can render valuable aid in disseminating this prophylactic enlightenment, but his opportunities are comparatively restricted. In private practice he is brought into relations with young men only in his capacity as healer, after the disease has already been contracted. With the great body of the working classes, with the poor who are treated in public institutions, he is rarely brought into professional contact except in the crowded classes of the dispensaries.

It is evident that this education, to be of prophylactic avail, must be timely; it must be given before the age at which contamination commonly takes place. The agencies which serve for popular education, the public school system and our high schools and colleges, should be utilized for the purpose of disseminating this hygiene knowledge. I believe, then, that a knowledge of the physiologic laws of generation, the hygiene of the reproductive organs, and the dangers which attend their irregular exercise should form an integral, essential part of the system of hygienic instruction given in our high schools and colleges.

Instruction in a knowledge of the "effects of alcohol and other narcotics on the human body" is made mandatory by the law in the public school system of every state and territory in the United States. Certainly a knowledge of sexual physiology is quite as important as that of alcoholic physiology. A judicious qualification might be that such instruction should be given only to male students in the higher grades of our public schools.

It may be contended that such teaching would be met with protest or resistance on the part of the public, but to say that this knowledge is not proper or fitting and would soil the pure minds of innocence is absurd. Physicians can not too strongly combat the insensate idea that a knowledge of the organs which transmit life, which, in the language of an eminent clerical educator, "are given to co-operate in the mission of divine creation," is shameful and demoralizing. On the contrary, such knowledge is sound, sanative and wholesome. Its high purpose is to instruct young men how to live in accordance with the physiologic laws of a healthy nature. The teachings of science can always be translated into terms which do not offend the susceptibilities of the most modest.

If this sanative knowledge is denied young men they will imbibe from their older companions or dissolute associates erroneous and dangerous ideas, such, for example, as that gonorrhea is of no more significance than a common cold; that syphilis is a disease which is readily cured and there an end of it. They should be taught that these diseases are dangerous infections—often attended with the most serious consequences; that they may compromise the health for years or during an entire lifetime, and disqualify them for marriage. They should also know that venereal infection is the almost invariable concomitant of illicit intercourse. It is necessary that there should be preached to young men the gospel of the fear of microbes. St. Paul says, "we persuade men by the terrors of the law." Let us persuade them by the terrors of infection. Fear is by no means the most ignoble sentiment to which we can appeal. On the contrary, it is most wholesome and salutary in its effects. All hygienic precepts are inculcated on the basis of fear. We are taught to avoid all harmful or noxious external agents from fear of their consequences. Fear is the guardian, the protective genius of the human body, and we should appeal to this sentiment in endeavoring to shield young men from exposure to infection.

I shall make but brief reference to the moral teaching, which comes more properly within the province of religious teachers, as a preservative against exposure. Such training we all recognize to be the best and of the highest order. It has come to be recognized by the more progressive and broad minded of university teachers that the "training of the morals" of young men is quite as important as the training of the intellect, and that hygienic education forms a most essential part of this training. It is a question whether appeals addressed to the ethical or spiritual side of a young man's nature and which inculcate the ideals of self-reverence and personal purity are apt to be so effective as appeals based on the care and upbuilding of the physical health. In all matters relating to the functions of the body the physical consequences resulting from a violation of the laws of nature constitute the most effective deterrent.

How shall we reach the large body of the young working classes who are denied the benefits of this hygienic education in high schools and colleges? Hygiene knows no class distinctions; it is essentially democratic, and the poorer class should not be deprived of its protective benefit. To reach this class it is evident that this instruction must be collective and disseminated by means of "talks to young men" in conferences and lectures, and through the medium of printed slips or circulars.

It is no less important that the young women of this social class, from which the ranks of prostitution are largely recruited, should be enlightened as to the dangers and modes of communication of these diseases, of which they are, for the most part, in infantile ignorance. Thousands of young women suffer moral and physical shipwreck from ignorance of the fact that the loss of virtue often carries with it the loss of health. Many young women of lax moral principles are deterred from a step which would mean their moral ruin by the fear of maternity and the disgrace it proclaims. To this fear of maternity let there be superadded the fear of infection; let them know that even the kiss of a dissipated man may carry with it a dangerous and disfiguring disease. Scores of cases where syphilis has been communicated by a kiss, have come under my personal observation.

There can be no comprehensive system of prophylaxis which does not take into consideration the social conditions which favor the fall of women and their entrance into a life of shame. It is obvious that certain socio-economic conditions, promiscuity of employment, the economic dependence of women, pauperism, and the force of physical want, which impel many women along the road to ruin, lie entirely without the sphere of sanitary control; but the hygienic and moral training

which, by the promotion of masculine chastity, decreases the demand, and, by safeguarding women from the wiles of the seducer, diminishes the supply of prostitutes, would constitute a prophylactic measure of great value and one which is immediately available.

I am not so optimistic as to believe that we shall ever exterminate the plague of venereal diseases; certainly I do not indulge in the utopian idea that enlightenment will prove an absolute preservative against exposure to infection, or that the inculcation of caution is an infallible cure of incontinence. I do believe, however, that when young men are fully forewarned of the dangers of irregular sexual intercourse; when they appreciate the terrible consequences these diseases may entail, they will expose themselves less often, less recklessly, less foolishly. I also believe that when men are fully instructed as to the dangers, the social catastrophes which often follow the introduction of these diseases into married life; when an enlightened public sentiment will no longer complacently consider it a husband's privilege to poison his wife and children, but will demand the enactment of a law declaring such action a legal crime, incurring penal responsibility, that this crowning infamy of our social life will be lifted from the marriage relation.

Another most valuable prophylactic measure in diminishing the spread of venereal diseases is the prompt sterilization of sources of contagion by efficient treatment. Want of time prevents a proper presentation of the superior importance of this preventive measure. Every source of infection suppressed by treatment represents a distinct gain in the reduction of venereal morbidity. The facilities for the treatment of venereal patients are inadequate, restrictive and not adapted to the peculiarly private nature of the diseases. There is not a single special hospital in this country for this class of cases, while in many cities they are debarred entrance to general hospitals. New York City provides only 96 beds for its venereal patients; while Paris, with only two-thirds of our population, has 960 beds. The facilities for treatment should be enlarged, and free, gratuitous treatment should be furnished to all who apply, not so much perhaps in the interest of the individual as in the interest of those to whom his uncured disease might prove a source of danger.

It is evident that no effective prophylaxis of this class of diseases can be brought about without the consent and co-operation of the public. The public must first be enlightened as to its need of this prophylaxis. In studying the evolution of public hygiene, we shall find that the impelling motive in the institution of most sanitary measures has been economic or commercial interests. When an invasion of the plague, the cholera or yellow fever is threatened, the public is quite willing to sanction any measures instituted by the sanitary authorities, no matter how onerous or oppressive they may be, because trade and commercial interests are menaced. The vast machinery of the Public Health and Marine-Hospital Service, our quarantine systems, etc., are maintained to protect the trade and commercial interests of the country. In the present stage of our social progress, moral and humanitarian considerations should be invoked as impelling motives to sanitary protection.

Now, what is the attitude of the public in regard to this question of the prophylaxis of venereal diseases? It is one of indifference, one might almost say, of pronounced hostility to sanitary interference. The explanation of this indifference is ignorance, ignorance of the enormous morbidity from this cause, of its danger to the public health, to the family and to the race, and especially ignorance of the number of its innocent victims. This ignorance is due largely to the traditional shameful character of the disease, which renders it an unsavory subject, and is fostered by popular prejudice which closes all avenues of communication which serve for the dissemination of enlightenment.

Another cause of this indifference is the popular conception of venereal diseases as the exclusive appanage of vice, confined to an obnoxious class or their consorts, and always the result of illicit relations voluntarily entered into. How can we awaken the perceptions of the public to the magnitude of this social peril, and arouse the conscience and moral sense of the public to its manifest duty to sanction and sustain all sanitary and moral measures which are essential in this prophylactic work? Certainly not by exposing the almost universal prevalence of these diseases among prostitutes, and the necessity of "hygienizing" them and thus diminishing the risks of contagion to those who voluntarily expose themselves. We must impress on them the humanitarian aspects of the situation. The conscience of the public can only be touched by an appeal based on the infection of the innocent—those who do not voluntarily expose themselves and who are powerless to protect themselves.

In carrying out this campaign of education we must have the co-operation and support of members of the laity and of men who can mold public opinion and who are an influential force in the community. Co-operation is considered the key to success in most modern undertakings, and in a sanitary movement which is complicated by so many varied social interests, the union and associated effort of all the social forces which work for good are essential. We should enlist the co-operation of the heads of schools and colleges, who are charged with the education of the young and who can introduce needed reforms in their system of instruction; of the clergy, who can render invaluable aid through the moral training of young men; of jurists, who can intelligently frame legal measures of protection; of sociologists, who can render material service in remedying social conditions which favor the spread of these diseases; of philanthropists and of public-spirited men generally.

In my opinion, this socio-sanitary work of prophylaxis should be undertaken by a special society, composed of these influential elements and known as the "Society of Sanitary and Moral Prophylaxis." It should be a permanent organization, which should exert a continuous active force in dealing with an evil which has so many elements of vitality and permanence. This society should be a center for the diffusion of enlightenment—a medium of communication between the profession and the public. Individual members and committees of the medical profession may make elaborate reports showing the extensive prevalence of venereal diseases, their menace to the public health and their danger as a social peril, but they never reach the public, which needs this enlightenment, and therefore they do little good. The chief obstacle to this enlightenment comes from the atavistic impregnation of the public mind with the idea that a knowledge of the reproductive system and of its diseases is shameful, and the first effort of this society should be to break down this solid wall of opposition to the diffusion of such knowledge. Experience shows that in dealing with sanitary, as well

as with social problems, difficulties which were apparently insurmountable disappear when causes and conditions are carefully studied and when earnest and intelligent efforts are made to combat them.

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WHAT IS THE RIGHT ATTITUDE OF THE MEDICAL PROFESSION TOWARD THE SOCIAL EVIL?*

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The "social evil" is a euphemism for what F. H. Gerrish better characterizes as "mercenary sexual debauchery." The marriage of one man to one wife,[1] by which the man and the woman are henceforth no longer twain, but one flesh, constitutes the very foundation of all true social progress; this is the unit which in the aggregate forms a social fabric in which right rules, virtue is honored and God is revered, and against which no corruptive force can ever prevail.

Prostitution is unlawful sexual commerce, in which the prostitutes, male and female, while united in the sight of God, yet seek to avoid those responsibilities of perpetual mutual care and service, the necessary concomitants of the first commandment ever given to man and associated with blessing: "Be fruitful and multiply and replenish the earth." There can result from this unnatural bond no increment by which the state is built up, its traditions fostered, and its perpetuity guaranteed; this is the great moral disease ever at work on all sides seeking to undermine all those humane institutions which the experience of the ages has coupled with the good of our race.

As Prince A. Morrow testifies, there would be no question as to a social evil and venereal diseases were it not for prostitution; it is, therefore, with this root evil that we, as medical men, desire to deal to-day. I need not dwell on the facts of the disease; we all know them, for wherever we may live the foul river has its tributaries running by our door, and year by year we see thousands of young men and women (Morrow estimates 450,000 boys in our country alone) who began life with the expectation of pure living and high ideals, take the fatal plunge into the moral sewer, losing what they can never regain, even by the most careful living or conduct consistent with the standards of the world. The woman, once stigmatized in this way, hides in shame, a voluntary exile in certain haunts of seclusion; she struggles on leading a life of shame for a few short years (the average length of life of a prostitute is about six years), and then sinks, often a hopeless syphilitic and perhaps a drunkard, ending her days by suicide or with tuberculosis or in general decrepitude in an almshouse. The man, on the contrary, by reason of the double standard of morals adopted by a cowardly society, conceals his pollution, puts on a brazen face, goes freely into society, and often ends by marrying some pure girl, only to deposit in her lap—as a wedding gift from the first wife, the prostitute (*"le cadeau de noces que les courtisanes déposaient dans le corbeilles des jeunes épousées"*)— the seeds of the foul disease which makes her innocent wifehood a source of pain and misery, and often renders motherhood impossible or makes the child, if, indeed, one ever sees the light, a wizened monster, more fit for the grave than for sweet, happy, human relationships. The prostitute takes a poetic revenge, and by the disease she gives her paramour forever seals the fountain of nature and restrains her supplanter from acting beyond her own (the prostitute's) sphere, even though she be a thousand times legalized as wife by church and court.

I need not remind those who know so well the problems of public hygiene, of the trite fact that this has been the burning question of the ages, and that it was sexual immorality which ate the heart out of the decadent nations which have preceded us. Egypt, Assyria, Greece, Rome and the modern Latin nations are all by-words for profligacy, and before their collapse lust ran riot, until they fell a mass of corruption, destined to rise no more. Germany of to-day is saturated with this vice, and in spite of her present fair showing before the nations, owing to the splendid mentality and the law-abiding character of her citizens, she must, unless she reforms in this matter within a few generations, inevitably follow those who have walked the downward path into the pit before her. England and America are to-day honeycombed with this vice, which flaunts itself at every turn in every town, at all our frequented resorts, and nowhere more noticeably than in the very city where we now sojourn.

I need not dwell on this aspect of the case, for it is everywhere acknowledged, and nowhere more forcibly presented than in Morrow's recent plea.[2]

Responsibility? Who can escape it. Every intelligent adult man and woman has a real, an unavoidable responsibility touching this question, but most heavily does it rest on the shoulders of the three liberal professions—on the minister, the lawyer and the physician. On this tripod, whose members are in constant living contact with all ranks of society, rests the welfare of our body politic, and should we prove recreant to our trust, where is the hope for the body at large? The minister and the priest deal with man as a responsible agent in his relationship to God, preaching first the law which says "Thou shalt not," and then the loving message of grace ever crying, "Turn ye, turn ye, why will ye die?" The lawyer who sees man differentiated into his complex relationships, deals with the great fundamental principle of the Justinian code, *"alterum non lædere"* (Thou shalt do thy neighbor no harm), in all its ramifications; and it is his province by legislative and civil process to promote virtue in the state, as the tried foundation-stone which is the essence of a good government and the sole basis of its perpetuity. It is the manifest province of the physician to prevent and to hinder the spread of the protean diseases which harrass or shorten life.

These three professions, to a superficial view entirely distinct, are yet closely united by a common bond in one aim, namely, the upholding of public morals; and not one individual member of them can escape the moral obligation which rests on him in virtue of his choice of this as a means of livelihood. The very term "liberal" advertises the fact that he who claims it stands in relations of tender sympathy and helpful interest to his fellow-men, to whom his services belong for the establishment of good and for the relief of the oppressed.

Some have ventured to question this affiliation of morals with medicine, forgetful of the fact that the very diploma which the licentiate holds proclaims him to be

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

1. Gen., 2:24.

2. Medical News, June 4, 1904.

of good moral character. Eliminate the moral side of our calling and it is no longer a calling, but a trade.

But why should we be at further trouble than to treat our patients as they come to us to be healed? Why take any active steps in these matters? I once thought long ago, when I was a medical student, that a physician's chief business was to cure diseases, but a quarter of a century of experience has shown me that the highest and noblest practice of our art is to prevent them. What a pitiable showing does the history of all the recoveries by treatment from tuberculosis, malaria, typhoid fever, yellow fever, etc., make when we think of what might be done by prevention through the enforcement of personal, domestic, municipal, state and national hygienic laws, enforcing the knowledge we already possess. It is not too much to say that these affections could be almost wiped out in a generation, did not ignorance and politics—to which some even think of appealing for the relief of venereal disease—hinder.

There are three possible attitudes in relation to the "Social Evil":

1. Indifference.
2. Government control.
3. An active personal crusade, inspired by a profound sense of personal responsibility.

Indifference has been the attitude of the past; I trust that this day sounds its death knell. I would simply impress on you the fact that we have been living in this particular period for many years, and if you observe in your midst any appalling increase in loss of honor and decadence of morality among our young people, it is due to this régime of indifference, and not to a system of any kind which has been on trial. Please note emphatically that indifference, and indifference alone, has been tried and found wanting.

The outcome of indifference has been sin and disease running riot; a system of blackmail debauching our police service; and the corruption of the whole body politic.

Governmental control, the second of these attitudes, is a question before us for consideration. It involves the acceptance by the body politic of a situation by means of which prostitution receives legal status as a recognized (honorable, shall I say?) and duly protected calling, coupled with certain restrictions. What does such an attitude as this involve on the part of our government?

1. Licensing prostitution.
2. Taxation of prostitutes, bawdy houses, or both.
3. Segregation of prostitutes in certain known quarters.
4. A new department in our municipal government, with a system of police and medical inspection and espionage.
5. The right of enforced examination and commitment to lock hospitals when disease is found.

Note that all these impositions, strange to say, refer to women alone as the sole offenders and sources of disease.

Let us consider the great and fundamental question of this inquiry, namely, Has the law a right to sanction vice for any reason whatever? We are, unfortunately, so little trained in ethics, or perhaps better, morals, that many of us may be at first puzzled to answer this question. I believe that if I were to ask a hundred people consecutively, What is the law? the reply of the great majority would be that the law is simply a statutory declaration of the will of the majority. "May the law," then, I ask, "sanction evil, if the majority so rules?" This is the real crux of the situation, and it is no trifling matter that we should hold correct views on this head, for accordingly as the millions of American citizens answer this question, must our country stand or fall. Who are better fitted to answer this question than some of the greatest minds of which the Anglo-Saxon race has ever boasted?

I gather my extracts from Ritter's book on "Moral Law and Civil Law Parts of the Same Thing." Sheldon Amos, in his "Systematic View of the Science of Jurisprudence," says "the purpose of the law is to fortify and to maintain the public morality." Bishop, for thirty years recognized in the United States as a standard authority on criminal law, says: "Morality, religion and education are the three great pillars of the state and the substance of all private good. A community from which they are banished represents more than the gloom of the original chaos. Therefore, they should be objects of primary regard by the law." "Further, the common law practically and fully cherishes the public morals, and it punishes as a crime every act which it deems sufficiently evil and directly tending to impair the public morals." What, then, is morality? "Morality requires a man to treat his neighbor honestly and fairly; it can compel him to do so and punish him if he does not. Religion is a matter of belief; morality is a matter of conduct." "At common law," says Lieber on Penal Law, "indictability and immorality are convertable terms." In Well's "Pollock on Torts" he says: "All positive law presupposes a moral principle." Amos, quoted above, says that "the law as a mode of benevolent guidance and aid, characteristically stands forth as the ever-present and incarnate witness of that ultimate morality of which it is at best no more than the symbol and the counterpart." Furthermore, "morality and moral character are exactly the same in legal contemplation as are they when viewed from any other standpoint."

To go back to another very old authority: "By the law is the knowledge of sin." The law itself must be a righteous standard, and if it deflects at all, the reign of evil has begun, for there is no longer any standard by which sin can be proved. If that which should be the instrument to convict of sin becomes sin itself, to what, then, are we to appeal? Such are the opinions of eminent authorities whom none can gainsay.

As for myself, and I trust I speak for all in this professedly Christian land, I would declare: "We can not consent to sanction of evil that good may come from it." If appealed to to be practical, we answer that we can not afford to be "practical" at the sacrifice of principle; we will fight evil wherever we see it, and under all circumstances we will oppose the debasement of the public standards of right and morality. This we will do in entire confidence that in spite of all appearance the right so upheld will in the end prove victorious. Pure laws are the heritage we would leave to our generations yet unborn, and let not those who are caught in a final cataclysm of evil, point back to this day of boasted civilization as the memorable era when the public standards of right were first debased.

Does the legalization of vice bringing even the majority of the prostitutes under control and by lessening disease in the community afford the protection which it promises? Any statistical inquiry, drawn from foreign sources, for purposes of comparison, is valueless, since it serves only to contrast an era of indifference

with an era of regulation. For the present status of the question in Paris, I would refer to a brief but admirably clear presentation of the subject by Frederic Griffith of New York.[3]

The result of legalizing prostitution, in America, for I trust I speak for Canada as well as for the United States, would be to place the whole burden of proof that unrestrained sexual commerce is wrong in the sight of God and man, on the chaste men and women, who teach their boys and girls that purity is of heaven, and is their best heritage in life, and that uncleanness, born of hell, is their worst foe. Of what avail is all my teaching when prostitution is legalized and the leading minds of our country declare that the gratification of lust is venial; for the sanction of the law makes that which it ordains presumptively right. Moral purity is practically unknown and held in contempt in Germany as well as in France, where the term *pucelle* expresses the contempt felt for chastity. Shall we come to this!

If we legalize this infamous business, where shall we look to recruit the ever-fading ranks of these poor creatures as they die yearly by the tens of thousands? Which of the little girls of our land shall we designate for this traffic? Mark their sweet innocence to-day as they run about in our streets and parks, prattling and playing, ever busy about nothing, and earth's only memento of the angels in their guilelessness. Which of them shall we snatch as they approach maturity to supply the foul mart of the insatiable cravings of lust? Perish the thought. Again, we surely would not allow the daughters of our rich men to enter our legalized brothels. The poor man must suffer and be robbed of the flower of his family—the poor man who, Jacob Riis tells us, has no appeal beyond the policeman on the beat and practically no rights in our courts. What can he do against the lavish use of money by the rich man's son and the brothel keeper's oath and the policeman? Sherman said "War is hell," but war is a sweet, a noble and a choice calling compared with a life in this pit of iniquity which some have proposed to open in our land. The only way out of the difficulty is to assert that the young girls naturally love this debauched life, but before I believe that you will have to rob me of my years of experience with women who, for the most part, began by being seduced.

The most specious claim yet made has been that the legalization of vice is but a step toward its abolition. What does experience in regard to this teach? Where has this ever been done? Tell me, too, why, after more than a century of boasted national progress we should now take a step backward in order that we may go forward?

Consider for a moment, gentlemen, what effect the legalization of vice will have on the medical profession. The necessity for examining women licensed to carry on their business will create in our midst a vile and an odious specialty, akin and closely allied to the professional abortionist, degrading to our profession and justly bringing it into contempt by making it thus pander to vice. I surely need only to suggest and not to dwell on this insufferable degradation. Read Griffith's article, and see how some of the Paris medical men are employed with two tables examining prostitutes at the rate of about 450 an hour! What a lowering of our standards when we come to that! What an occupation for the man who starts out full of the hope of accomplishing great things for humanity armed with a diploma certifying to his "good moral character."

Finally, I come to the third attitude toward prostitution, namely, a moral crusade sustained by an intense sense of personal responsibility. What does this mean? It means that we shall recognize our individual responsibility toward all whom we can in any way hope to influence, toward our own children first, and then toward our patients, laboring in season and out of season to inculcate good morals, not omitting to warn them that the penalty of sin is death, the worst of all kinds of death—a living death to all moral sense.

This is the difficult path, for, instead of shifting the responsibility on to others by voting to pass a law, it places the burden where it belongs—right on the shoulders of every man and woman in this country. This and this alone is the course of that "eternal vigilance which is the price of liberty."

If as sincere Christian men you will take this course, then I have great hopes for the future; if you adopt any other course as more "practical," my hope is gone.

3. New York Med. Record, April 23, 1904.

SYPHILIS AS A DISEASE INNOCENTLY ACQUIRED.*

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Syphilis is not necessarily a venereal disease. Syphilis is one of the great diseases affecting the human race, and if its entire clinical history could be perfectly known, for ages past, it would be recognized that this one poison had caused greater damage and misery and more decided race degeneration than any other one malady, except tuberculosis. And yet, thus far, except in a few isolated localities, there has been no general and intelligent attempt to restrict its ravages.

The common occurrence of syphilis as a result of unlawful sexual intercourse, and its inclusion among venereal diseases in so many text-books of late years, are undoubtedly the cause of much of the feeling existing in regard to it as a disease not to be mentioned in good society, and one whose recognition should be tabooed. It has been ignored through ignorance and neglected through negligence.

In studying the older literature of syphilis, it is seen that often quite another view was taken. It is often described as an epidemic disease, which spread through families and communities, in the ordinary run of domestic, industrial and professional life; as, for instance, by kissing, nursing, hand feeding, eating utensils, etc.; likewise in factories, by gas-blowing, weaving, etc.; also by cupping and leeching; while it was also recognized that the disease might be communicated in sexual intercourse, in families.

But with the spread of civilization and the luxury and license attending it, and especially with the growth of cities and the increased use of intoxicants, syphilis has come to be more and more diffused by illicit intercourse, and to be regarded wholly as a venereal disease; and by some it is considered as a just penalty for sexual transgressions, much to the detriment of its proper recognition as a contagious malady which should be guarded against by proper legal restrictions.

Syphilis is undoubtedly a disease of cities, where

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

prostitution abounds, and it has been estimated that there are no less than 50,000 new cases of syphilitic infection in New York each year. But there is abundant evidence of its occurrence everywhere throughout this country, it is carried from the cities to the rural districts, and there often transmitted in a wholly innocent manner. These cases sometimes go unrecognized for long periods, because no venereal element is found, or exists, and the diagnosis is not made until serious lesions lead the patient to come or to be sent to the city for medical aid; of this innumerable instances could be cited.

Owing to the increase of syphilis acquired by illicit venereal contact, the proportion of cases of innocent syphilis is undoubtedly less than it was a hundred or more years ago, and the relative number is also probably decreased by the better knowledge of the contagious nature of the disease and by the better and more thorough treatment of later years. But everyone occupied at all seriously with syphilis will testify that there yet occur in the cities and in the country numberless cases where it is acquired in as perfectly innocent a manner as are smallpox, measles and other contagious diseases, which are now under the control of health boards.

Time would fail to enter at all fully either on the clinical and historical proof of the ravages of syphilis as an innocent disease, or on the efforts which have been spasmodically put forth here and there to control the spread of the disease by legal measures. Nor is the latter necessary, for legal action will certainly follow when once the public is thoroughly convinced that there is danger which may be thus avoided. A brief presentation of some of the established facts regarding its innocent acquirement may help make the matter plain to those who have not hitherto given it particular attention. In doing so, I must in a measure repeat what I have previously written on the subject,[1] and even some things which I said in a paper on "Syphilis as a Non-Venereal Disease," before the Section on Cutaneous Medicine and Surgery of the Association, four years ago, in this very city.

PREVALENCE OF SYPHILIS.

It is pretty well established that syphilis has existed on the earth from time immemorial, and many find in the Bible abundant allusions to the disease, while bones of ancient times, which have been exhumed, give evidence of its long existence. Records in Chinese literature also point back to its presence at least 2000 years B. C.

All of our real knowledge of syphilis, however, dates back about 400 years, when the followers of Columbus were supposed to have brought the disease to Europe from the western lands, although it has been contended that there is abundant evidence, from exhumed bones, of its having been present there long before that time.

However, soon after 1494, the disease spread with great rapidity and virulence, after the invasion of Italy by Charles VIII of France, until a large portion of Europe showed signs of the disease, and within 100 years there were published very many accounts where syphilis affected large communities, in an epidemic manner, through innocent channels, relating to domestic or industrial life. The real character of the disease was unknown, and the occurrences were reported under various names, but they have been identified as unmistakably syphilis.

With greater enlightenment these extensive infections by the disease have gradually diminished, and now rarely, if ever, occur; although there have been many groups of cases of infection by vaccination, circumcision, eustachian catheterization, etc., even up to the present time.

In Russia the disease is stated to have become so prevalent that in some villages at least one-quarter of the inhabitants are affected, and all writers agree that this has happened largely through family life, as prostitution is almost unknown in the villages.

In all countries of Europe writers testify to the very widespread existence of syphilis, both in the cities and in the country districts. In Portugal, Ferguson stated in 1812 that a large share of the population had become infected through long neglect.

In Asia and some parts of Africa the disease is very prevalent, but now apparently of a rather mild form, owing to the protection afforded by previous race infection; but syphilis affects very severely outsiders who become there affected. In Shanghai, syphilis formed 19 per cent. of all cases in the general hospital, 16 per cent. in Hongkong, and almost 30 per cent. in Tientsin.

It is difficult to secure any reliable data in regard to the prevalence of this malady in the United States, but in the statistics of general skin diseases, gathered by the American Dermatological Association, syphilis gave a percentage of 11.5, in 300,000 cases. As has been stated,, it was estimated by Dr. Sturgis, some years ago, that there were 50,000 cases of new infection in New York City each year.

Syphilis, an intensely contagious disease in certain stages, being so widely and freely distributed everywhere, let us briefly consider the three lines along which innocent syphilitic infection may take place: 1, Marital syphilis; 2, hereditary syphilis; and 3, innocent extragenital syphilis.

MARITAL SYPHILIS.

This mode of infection stands prominent in connection with the innocent acquiring of syphilis, and all observers testify that wives suffer very frequently from the sins their husbands committed before or after marriage.

Fournier of Paris found that fully 25 per cent. of all syphilitic women, seen by him in private practice, had contracted the disease innocently and undeservedly, while of the married women the disease was unmistakably traced to the husband in 75 per cent. of the cases.

In my own private practice, I found that in fully 50 per cent. of the women with syphilis the disease was acquired in a perfectly innocent manner, while among married women, the percentage of innocent infection was quite 85 per cent. Is it not time that the law, which has done so much to stamp out smallpox, yellow fever and many infectious and contagious diseases, should attempt something for these innocent sufferers? But the subject of hereditary syphilis presents, if possible, a yet darker picture.

HEREDITARY SYPHILIS.

The limits of this paper will permit of only the briefest mention of a few of the facts pertaining to hereditary syphilis, about which so much has been written. It is well known that syphilis is the constant cause of abortions, and that it also produces sterility, both in the male and in the female. It is also well known that the mortality of children born of syphilitic parents is very great. At the hospital in Moscow, Russia, from 1860

1. Bulkley: Syphilis in the Innocent (*Syphilis insontium*) Clinically and Historically Considered, with a Plan for the Legal Control of the Disease, New York, Bailey and Fairchild, 1894; also THE JOURNAL A. M. A., April 6, 1901.

to 1870, there were 2,002 such births and 1,425 deaths; that is, 71 per cent. of children born there of syphilitic parents died.

If, therefore, the effects of syphilis be considered simply in regard to the loss of life to the state, there are ample reasons for the introduction of legal measures to check the spread of the malady. But the harm from the disease goes still farther in inherited syphilis.

Tarnowsky tells of three families of syphilitic parents in which there were 22 births. Of these came only one healthy adult person. Of 13 who survived some years, 8 were incapable of self-support, from mental and physical defects, and the other 5 were weak, nervous, and totally unfit for procreation; this occurred in intelligent families, with no other cause than syphilis for these disastrous results. He also quotes from Tchistiakow the case of a man, who had severe syphilis in early life, which destroyed the palate, of whose nine children two were idiots, one was deaf and dumb and one died in infancy. Many similar illustrations of the direful effects of hereditary syphilis could be given from literature and personal experience. What syphilis has accomplished toward race degeneration will never be known, but we do know that it has at times decimated our American Indian tribes, and has wrought unspeakable havoc in Russia, in the Hawaiian Islands and elsewhere.

EXTRAGENITAL SYPHILIS.

The accidental infection by syphilis in extragenital regions is a most interesting field of study, and many hundred observers have reported thousands of cases relating to accidental chancres in every part of the body; more than 200 cases of this kind have fallen under my personal observation and care. This subject also can be but briefly touched on here, but an outline of the circumstances under which it has repeatedly happened may help to appreciate the gravity of the danger and its bearings on the health of the community.

Among 9,058 recorded cases of extragenital chancre, collected from literature, there were 1,863 resulting from vaccination, 745 from cupping and phlebotomy, 179 from circumcision, and 82 from tattooing. Excluding these, the largest number of extragenital chancres, 1,810, were located on the lips, 1,148 on the breast, 734 in the buccal cavity, 432 on the fingers and hands, 372 about the eye, 307 on the tonsils, and many others on different parts of the body.

There are three general lines in which syphilis may be thus innocently acquired: 1, In domestic and industrial life; 2, in the nourishment and care of children; and 3, in professional pursuits in the care of the sick.

Under the first of these we find instances of the innocent transmission of syphilis finally classified under almost fifty groups, relating to almost every possible phase and aspect of domestic and industrial life. Not only has syphilis actually been given repeatedly by kissing, biting, scratching and personal contact, but it has in numberless instances been transferred by spoons, knives, forks, cups and glasses, as also by means of tobacco pipes, cigars, cigarettes, and even by troches and candy, passed from mouth to mouth; also by underclothing, masks, plasters, bandages, lint, towels, sponges, combs, toothbrushes, syringes, sick chairs, etc.

Among those who have acquired it innocently in industrial life may be mentioned glass-blowers, assayers, weavers, musicians, conductors (by whistles), cooks, furriers, upholsterers, shoemakers and servants.

The second class, relating to syphilis acquired through the nutrition or care of children, includes literally thousands of instances, often extending in long series of cases, where syphilitic infants have infected nurses, and they in turn have infected other children; or where syphilitic nurses have given the disease to infants under their charge. The very day of writing this a child 2 years old was brought to my office with an unmistakable eruption of macular syphilis. On the prepuce was a large, hard chancre, and the infection was traced probably to a nurse girl who had been discharged about a month previously, as she had proved to be a loose character and was pregnant; the father and mother were seen and were absolutely free from syphilis. Many instances are on record of infection by means of nursing-bottles, artificial teats, etc.

In the third class, relating to professional body service in the case of the sick, we find vast numbers of instances where: 1, The operator is the victim; 2, the operator, having syphilis gives it to another; and 3, where the operator is the means of conveying syphilis from one patient to another.

Under the first class we find hundreds of instances where physicians, surgeons, accoucheurs, midwives, nurses, breast-drawers and wound suckers have acquired the disease thus innocently I have had over two dozen physicians under my care who were innocently infected.

In the second class there are many records of those who, having syphilis, have communicated it to others by operations and otherwise, as in circumcision, tattooing, breast-drawing, vaccination, etc.

In the third class we find a sad array of cases where syphilis has been conveyed from one patient to others, by vaccination, skin-grafting, wet cupping, tattooing, by the use of the eustachian catheter, through dental instruments, etc.

DANGERS OF SYPHILIS.

From what has been presented it is readily seen that the opening sentence is fully justified, namely, that syphilis is not necessarily a venereal disease. Indeed, it is only accidentally such, owing to the delicate character of the tissues about the genital organs, and the readiness with which abrasions occur in that region, and also the ease with which the virus is retained there. Syphilis is simply a contagious disease, and wherever its poison can reach an absorbent vessel, infection is sure to take place, whether the person is innocent or guilty. Indeed, the only wonder is that more persons do not contract the disease, in view of the intense contagiousness of the early mucous lesions and the recklessness with which certain patients with masses of mucous patches in the mouth will often mix freely in society, unrestrained, as every one having much to do with syphilis will testify. The only explanation is that the poison does not chance to find an abraided surface to enter.

This is not the place to enter into a discussion of the nature of the syphilitic virus or its mode of action on the system; suffice to recognize that it is communicated to healthy individuals constantly, both by immediate contact and by mediate objects, in hundreds of unexpected manners. Not only does the trustful wife and the innocent maiden acquire the loathsome disease from a faithless husband or lover, but the honored physician or nurse, while ministering to the sick may acquire a disease which often incapacitates them from duty, for a season. Nor is any one certain of not being infected innocently, because, as already mentioned, instances are constantly met with where contagion oc-

curs in most unexpected manners; for it is to be remembered that the virus deposited on various objects may retain its inoculability for an indefinite period.

LEGAL CONTROL OF SYPHILIS.

In view of what has been said, even so briefly, which could be magnified many fold by hundreds of observers, is it not strange that no systematic attempt has been made by health authorities to obtain the proper control of this disease which is inflicting so great a damage on the community?

As already intimated, the reason is found in the fact that syphilis is so thoroughly associated in the minds of the profession and of the laity with venereal transgressions, that there is a moral repulsion against any measures looking toward its repression. So long as syphilis is regarded solely as a venereal disease, it will be extremely difficult to obtain adequate legislation for its control. But, when the medical profession and the laity are thoroughly awake to realize the relative frequency and danger of its innocent transmission, there will be little difficulty in solving the problem.

The matter of legal protection against syphilis has nothing to do with the subject of prostitution. The fact that the syphilis is frequently acquired through prostitutes should be no bar to the community protecting itself against the disease. The question is not in regard to "legalizing prostitution," nor of inspecting, licensing or legalizing the "social evil," nor of protecting those engaged in it. It is to be approached from a higher ground, and the effort should be made to have some restriction placed on a disease which is dangerous and communicable, and which continually attacks many in a wholly innocent and unexpected manner.

That the spread of syphilis can be checked, to a greater or lesser degree, by proper measures, is evident, both from experience and science. In the many epidemics of syphilis which have occurred in innocent manners, in time past, the disease has been checked when its real nature was recognized and proper precautions instituted. Scientifically, we know that the poison can not develop *de novo,* but that it is always communicated from one person to another. We also know that after a certain period it ceases to be virulently contagious. If now, no new syphilis is introduced into a community, and if means can be devised whereby those already diseased do not expose others, until that safe period is passed, the malady will cease to exist. To endeavor to accomplish this would be the duty of the health boards, when once the disease was placed under their control.

All are fully acquainted with the incalculable benefits which have accrued to the public by the powers vested in boards of health, not only in a general way, but also in controlling other contagious diseases, such as smallpox, scarlatina, diphtheria, yellow fever; why should not syphilis be placed among them and protection be afforded to the innocent? Syphilis counts its victims, innocent and guilty by thousands, where other diseases count by hundreds.

There should be no difference of opinion about the desirability of placing syphilis under some restraint. I can not refrain from repeating the suggestion which I have made elsewhere and on another occasion. The first step, I believe, is to recognize and place syphilis among other contagious diseases, under the control of health boards, and as public sentiment is aroused to the advantage of this proceeding, it will be easier to advance step by step in the restraint of the disease. If it were placed on the same footing as smallpox, scarlatina and diphtheria, and if it were made a misdemeanor to communicate syphilis wittingly, a great step would have been taken toward diminishing the frequency of the disease and consequently its innocent infection.

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SYPHILIS AFFECTING INFANT MORTALITY.*

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To Fournier, Morrow, Carpenter, and Abt, and many others, we are indebted for many important facts bearing on fetal and infantile syphilis, and to these authorities I wish to give credit for much valuable information.

Approaching the subject from the standpoint of either the obstetrician or the pediatrist, we are appalled at the great influence of syphilis on infant mortality.

Taking into consideration all cases of premature delivery, prior to or after the third month, next to criminality, syphilis heads the list as a cause of abortion and miscarriage. From the standpoint of the pediatrist, the number of cases of syphilis in infancy and childhood will form but a small percentage of the total number of cases seen. The mortality in syphilitic children, however, is as great, if not greater, than in any other disease.

The method of conveyance of syphilis to offspring has been much discussed, especially as to the relative responsibility of each parent and as to how the prognosis is influenced by paternal, maternal or mixed source of infection. Infection may be transmitted by the father alone, through the medium of the spermatozoa; from the mother, the father remaining healthy, or it may be a mixed infection from both parents.

With Carpenter, we believe that Colles' law can be explained by the existence of a syphilitic toxin, transmitted from the syphilitic fetus, through the placental circulation. The mother is thus rendered immune against infection by the mucous patches in the child's mouth while they are capable of infecting a healthy wet nurse. Against this theory of acquired immunity without active syphilis is the statement by Morrow that well-authenticated cases are on record where women who have given birth to syphilitic children have afterward acquired the disease.

On the virulence of the disease in either or both parents at the time of conception will depend the severity of infection of the child. It is a fact, noted by different observers, that in the course of a case of syphilis, for instance during a short intermission in treatment, an infected parent may beget a syphilitic child and during treatment a healthy one. Fournier has reported a case in which a syphilitic child was born twenty years after the primary lesion in the parent, healthy children having been born in the interim.

Syphilis, unfortunately, does not affect a man's procreative powers or his sexual desire, nor does syphilis in the mother interfere with her abilities to conceive. History shows that syphilitic women conceive and abort in rapid succession.

In all walks of life syphilis, when one parent alone is affected, is much more common in the father, and it is

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

possible for him to beget a healthy child, also for him to beget a syphilitic child without primarily infecting the mother. The chances, however, of a child's escaping infection when the mother is syphilitic and the father healthy are very small, indeed.

Fournier, quoted by Morrow, observed 200 cases in private practice, many of whom had been subjected to prolonged treatment before marriage. In these cases there were 403 pregnancies, of which 288 infants survived, while 115 either died *in utero* or a short time after birth. This gives a mortality in these cases of paternal infection of 28 per cent., which is a startling percentage when it is considered that they might all be considered favorable cases, having been subjected to treatment for varying lengths of time before marriage.

As to the statistics of maternal heredity, the same observer found that in 85 pregnancies, where the mother alone was syphilitic, 58 terminated by abortion, stillbirth or moribund children, while 27 terminated in children who survived—a mortality of 67 per cent. Morrow gives also the Lourcine Hospital statistics, which show that in 167 pregnancies coincident with maternal syphilis 145 terminated fatally, while in 22 only did the child survive—a mortality of nearly 88 per cent. The statistics of La Pileur give 414 births, with 295 deaths —a mortality of 71 per cent.

A mother contracting syphilis after conception, when both parents were healthy, may give birth to a healthy child. If the infection is prior to the third month, when there is no placental attachment, and the specific treatment is begun at once, a healthy child may be born. If an infection occurs after the seventh month the child may escape, as the incubation period for the initial lesion and the secondary manifestations may not have elapsed before the birth of the child.

In mixed heredity Fournier gives a mortality of 68 per cent. in 1,500 cases, which he believes would be increased to at least 86 per cent. had all hospital cases been considered.

Fournier states: "It is by thousands we can produce cases where syphilis has killed one, two, three, four, five or more infants in the same family. Numbers of cases can be cited in which the quotient of mortality rises higher and higher in certain families."

Summarizing the influence of syphilis on pregnancy, statistics show a fetal mortality in paternal heredity, under most favorable circumstances, of 28 per cent; in maternal heredity, according to different observers, of 67 per cent., 86 per cent. and 71 per cent. In mixed heredity the mortality may range from 68 per cent. to 86 per cent.

From the standpoint of the pediatrist, what is left for the syphilitic child? What organ is exempt from its ravages? When can it be said that the child is beyond the possibilities of danger?

When we consider the statistics of Morrow, that one-third of all children born syphilitic die before they reach the age of 6 months, those responsible for this symposium need no defense.

To describe the manifold lesions which may develop in a child born syphilitic is not within the scope of this paper. Suffice it to say that not a tissue nor organ in the body of the little one is exempt. It may be born apparently healthy to develop symptoms later, or it may have every evidence of heredity at the time of birth.

An interesting phase of this subject of infantile syphilis has recently been brought to our attention in this country by Abt, who called into prominence the writings of Fournier describing syphilis *hereditaria tarda*. This is the late manifestation of syphilis in a child from 3 years to puberty who has previously shown no symptoms. Abt speaks of two factions, one claiming that these cases are authentic, the other that they are really cases of hereditary syphilis in which the early symptoms were so slight as to escape notice. I would rather tend to the latter view.

Hutchinson's triad of symptoms characteristic of congenital syphilis are interstitial keratitis, labyrinthine deafness and deformity of the upper incisor teeth.

Appreciating, then, the insidiousness of the disease, the impossibility of giving a clean bill of health to any child born of syphilitic parents, we believe there is no disease, not excepting tuberculosis, which slays so many children.

With Morrow we can say: "We may look on syphilis not only as a factor in depopulation, but a cause of degeneration of the race. It is the quality of expansiveness, this capacity of morbid irradiation through family and social life, that gives to syphilis its superior significance as a social danger."

[EDITOR'S NOTE: The Symposium on Venereal Diseases and Prophylaxis will be continued next week and will be followed by the discussion.]

ACUTE YELLOW ATROPHY OF THE LIVER.

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AND

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During the past few years, there have been studied either tissues or organs from four cases of acute yellow atrophy of the liver, in the pathological laboratories of the University of Chicago and Rush Medical College, and on account of the relative infrequence of this disease it has seemed advisable to place the records of these cases in the literature where they may be available for investigators of this condition, even though not all of our reports can be as complete as we could desire. Osler's estimate that there are 250 cases on record up to 1894 inclusive, 50 of these being added by Hunter from 1880 to 1894, is possibly based on the estimate of Thierfelder in 1878 that there were 200 cases in the literature at that time. If we accept this latter as true there are at least 450 on record at the present time, as shown by the Index Medicus.[1] Undoubtedly the disease is somewhat more frequent than might be inferred from these figures, for the three cases that have occurred in our own autopsies have been found in a series of something less than 1,500 autopsies recorded in our laboratories. Nearly all recent writers refer to Osler's statement that he has not met with a single case of acute yellow atrophy, usually with some astonishment. Our cases are as follows:

CASE 1.—This body was examined in the Cook County Hospital, July 26, 1898, by Dr. Hektoen. Unfortunately, at this time the following brief history is all that can be obtained, the hospital records having disappeared:

History.—The patient was a young woman, about 20 years of age, unmarried, who was in the hospital helping about the wards during the latter months of her pregnancy, being admitted as she had no place of refuge. In the sixth month of her pregnancy, which up to that time had been normal, the woman being of exceptionally good physical development,

1. Best.

she became sick with a slight jaundice, headache, and other symptoms resembling those of a catarrhal jaundice. Three days later she miscarried, no record of the conditions at this time being available. A few days later she developed some temperature and became comatose. A physical examination at that time showed a distinct diminution in the area of liver dullness, and the jaundice was extreme. The urine showed both leucin and tyrosin crystals, in addition to bile, albumin and casts. The coma continued for eighteen hours, without convulsions or delirium, terminating after that time in death.

AUTOPSY.

The autopsy report is as follows:

External Appearance.—The body is well nourished and developed, showing the usual amount of posterior lividity, also some small subcutaneous hemorrhages over the left leg. The entire subcutaneous surface is saffron yellow.

Body Cavities.—Abdominal, pleural and pericardial cavities show no changes.

Mouth and Respiratory Tract.—The tongue is covered with a brownish crust, and the pharynx, larynx and trachea show no changes. Thyroid weighs 50 grams, being uniformly enlarged and soft. The thymus is absent. The lungs crepitate everywhere, and appear somewhat distended. There are small hemorrhages beneath the pleura and some of them have extended a centimeter or so into the lung substance. The lower lobes, especially, are bloody. The peribronchial lymph glands show no changes.

Heart.—The heart weighed 240 grams. The pericardium shows numerous small extravasations of blood, especially over the posterior surface of the upper part of the left ventricle. In the right heart are yellow goose-fat clots. The endocardium is normal, but there are small extravasations beneath it in the left ventricle. The myocardium is rather flabby, opaque, and loose in texture. In the beginning of the aorta and in the coronaries are a few small yellowish streaks. There is an extravasation of blood in the periaortic connective tissue of the posterior mediastinum.

Kidneys.—The kidneys together weigh 320 grams. The capsule is free, surface smooth, and stellate veins injected. On the cut surface the parenchyma is yellow and the cortical markings indistinct. In the mucous membrane of the pelvis are small hemorrhages. The right pelvis and ureter are somewhat dilated, the ureter to the size of a finger. There is no obstruction to the outflow from the bladder or anywhere in the course of the ureter.

Pelvic Organs.—The uterus fills the true pelvis. Externally there are no changes. There is no exudate on any part of the pelvic peritoneum. The muscular wall of the uterus is soft, the mucosa rough and reddish, and covered with shreds. In the posterior part of the fundus are layers of coagulated blood. The mucosa of the vagina is normal.

Gastrointestinal Tract.—Esophagus is normal. Stomach contains a blackish, semi-solid substance; the mucosa is yellowish and covered with a viscid mucus in places, otherwise there are no changes. The small intestine shows a slight swelling of Peyer's patches. The large intestine is normal, but contains great quantities of clay-colored fecal matter.

Liver.—This appeared much smaller than normal when *in situ*, and had fallen away from the diaphragm, lying in a flabby mass in the posterior part of the cavity. There are no adhesions about it. Total weight, 1,020 grams. The surface is smooth, presenting red and yellow areas, the red, or brownish red being more pronounced. The size is diminished in all diameters, especially antero-posteriorly. Consistence is extremely flabby, and the capsule is loose and wrinkled. The structures at the hilum show no changes except that the lymphatic glands are enlarged, reddish, and in places hemorrhagic. The liver cuts with difficulty, and its cut surface is mottled, brownish red and yellow, and the lobular markings are absent except in the upper right corner of the right lobe, where there is a grayish network that corresponds to Glisson's capsule, enclosing reddish liver substance in the form of ordinary lobules. Otherwise it is chiefly red or brownish-red with small areas of yellow, while the left lobe is principally a pure yellow. The cut surface is moist, but very little blood exudes from the vessels, which appear closer together than normally. The gall bladder is empty except for a thin layer of grayish mucoid substance.

Spleen.—This is large, soft and red.

Pancreas.—This organ shows no changes.

Head.—The scalp, skull, membranes of the brain and brain substance are normal. The hypophysis is uniformly enlarged.

Anatomic Diagnosis.—Puerperal state. General jaundice. Acute yellow atrophy of the liver. Multiple hemorrhagic extravasations (subpleural, subepicardial, periaortic, subcutaneous and pulmonary). Enlarged thyroid and hypophysis. Acute degeneration of the kidneys. Moderate right hydronephrosis.

MICROSCOPIC EXAMINATION.

Liver.—In a section through an area more nearly normal than most of the organ, the liver cells show little change except that there is some blood pigment. There are some areas of necrosis, both central and peripheral, which show the remains of destroyed liver cell nuclei, lying in the original stroma, which is unaffected. At the periphery, there is an extensive formation of new bile ducts and round cell infiltration. No blood is present in the section.

In a section through a yellow area the lobules are indistinct and swollen, the individual cells appearing as swollen, yellow granular, necrotic plaques, with indistinct outlines and showing no nuclei, the arrangement into columns being lost. The corners of the lobules are indicated by a few faintly staining nuclei about the bile ducts, which, as we approach the borders of the yellow areas, where they fade into red, become more extensive, take the stain more deeply, and show proliferation of the bile duct epithelium, the formation of new bile ducts, and many isolated epithelial cells and numerous round and epithelioid cells. The central vein is somewhat thickened.

A section through a red area shows a reticular mass showing a few scattered nuclei, interspersed with areas of densely packed nuclei, enclosing the old proliferating bile ducts and new-formed ones. These areas are much closer together than normally, showing contraction of the lobule. The new bile ducts are atypical in shape, sometimes with and sometimes without a lumen, taking a tortuous course, and showing dendritic processes; the epithelium is often three or four layers of cells deep in the lining of the lumen. The remainder of these areas consists of round and epithelioid cells. The reddish reticular mass shows a few vacuoles, the site of destroyed liver cells, sometimes containing the remains of disintegrated nuclei, and numerous red corpuscles lying in the original interstitial tissue of the lobule, which is brought into prominence through the contraction of the lobule.

Kidney.—This shows much congestion of the cortex. The space surrounding a glomerulus is filled with débris from the disintegrated and desquamated epithelium of Bowman's capsule. The glomerulus itself is normal. The cells of the convoluted tubules show the changes of cloudy swelling, and the lumen is filled with granular débris.

Other Organs.—In the uterus masses of syncytial cells and thrombi containing many necrotic leucocytes are found in the sinuses. The hypophysis showed a cyst with colloid contents near the anterior margin, as large as a grain of wheat and without cellular lining. The thyroid is distended with colloid. The gall bladder shows desquamation of its epithelium.

BACTERIOLOGIC REPORT.

Cultures on glycerin agar plates were made from heart's blood, kidney, liver, spleen and lung, and two organisms were isolated. Cocci in pairs, staining by Gram's method, the colonies being round and grayish, with sharp margins. Bacilli not staining by Gram's method, the colonies large, round and grayish white, and showing on the surface a brownish boat-shaped area. Anaërobic cultures from the liver showed no growth. Serum tubes showed the same growths as the plate cultures. Serum tubes from the gall bladder remained sterile.

Cover slips from the heart's blood show numerous diplococci (1-1.5 microns), mostly in twos, or chains of from three to five, the opposing ends being nearly square; also long bacilli lying often end to end. Cover slips from the gall bladder show occasional cocci, and a few yellowish tyrosin crystals. Slips from the spleen, lung, liver and kidney show the same diplococci and bacilli.

Tubes inoculated with the cocci show:

Bouillon: Slight gray cloud.

Agar: Numerous pin-point white colonies along the needle track. No pigmentation.

Potato: A few glistening colonies along the streak; no growth in potato tubes from kidney or lung.

Gelatin: Not liquefied.

Tubes inoculated with the bacillus show:

Bouillon: Slight cloudiness toward the bottom.

Agar: Grayish yellow colonies along the streak, and gas in glucose agar.

Potato: Grayish yellow, glistening, slimy growth along the streak.

Litmus Milk: Reddened and coagulated. Hanging drop shows slight motility.

A small quantity of liver substance was inserted in the abdominal cavity of a rabbit. It remained perfectly well, except for slight emaciation. It was killed at the end of one month, and the only change found was that the liver was brown in color.

CASE 2.—Mrs. H., housewife, aged 35, had been married twelve years and was the mother of five children. The last child was born three and a half years before the mother's death.

History.—The patient's health is said to have been failing to some extent during the last year of her life. In August, 1902, jaundice appeared. She complained of feeling tired, and of headache, constipation and pain in the right shoulder. The stools were light in color. The appetite and sleep were good. She had been semicomatose for three days when admitted to the Norwegian Tabitha Hospital, Nov. 2, 1902, at noon. The coma was then complete, and the jaundice very deep. The temperature was 98.6°, pulse 110, respiration 18. The urine was free from albumin and sugar, but contained bile and blood casts; no record of an examination for leucin and tyrosin. At 5 p. m. the temperature was 101.2°, pulse 134, respirations 22. At 11 p. m., temperature 104.2°, pulse 170, respirations 40. At midnight, temperature 105.4°, pulse 184, respirations 44. November 3, 1 a. m., temperature 106.3°. Death occurred at 2:30 a. m.

AUTOPSY.

An incomplete postmortem examination was made by the hospital internes seven hours after death. The organs removed were sent to the Pathologic Laboratory of Rush Medical College and examined by one of us. The record made is as follows:

External Appearances—The body is well nourished. The skin is of a deep greenish color and the face dark bluish, with ecchymoses.

Abdominal Cavity.—The peritoneal cavity contains several liters of clear yellow serum.

The organs of the neck were not examined.

Lungs.—The right lung weighs 570 grams. The pleura is smooth. The lung crepitates everywhere. The upper lobe is reddish on section, rather bloody, and a considerable amount of frothy fluid exudes. The middle lobe is spongy and light grayish-red in color. The cut surface of the lower lobe is dark red. This lobe contains considerable blood and frothy fluid. The left lung was not removed.

Heart.—The heart weighs 240 grams. The pericardium is smooth. The tricuspid opening admits six finger tips, the mitral four. There is some fibrous thickening at the free margin of the anterior mitral cusp. The other valves are normal. The myocardium is light grayish-red, and rather soft. The beginning of the coronary vessels is smooth. In the aorta there are a few small sclerotic areas in the ascending arch.

Spleen.—The spleen weighs 200 grams, and is rather soft. The cut surface is dark red and very bloody. The malpighian bodies and trabeculæ are plainly visible.

Gastrointestinal Tract.—The lining of the stomach is coated with black mucus and is rather pale, with hyperemic and ecchymotic points.

Liver.—The liver weighs 830 grams, and measures 21x22 x11x5x2 cm. (placed on a flat surface). The anterior portion of the right lobe is flattened and elongated. There is a transverse rib indentation running across the upper surface of the right lobe 8 cm. back of the anterior edge. The organ is very soft. Its external surface is mottled dark red and light grayish-yellow. The cut surface is also mottled, showing two sharply differentiated appearances of the tissue. About one-half of the cut surface is red, with fairly distinct markings; the lobules are here very small, with gray centers. The rest of the cut surface is made up of islands of light grayish tissue, which is firmer and has much larger lobules, the centers of which are reddish and sunken, the outer portions grayish red. In the substance of the liver are two cholesterin concretions, 1 and 3 mm., respectively, in diameter.

Gall Bladder.—The gall bladder contains thick, dark green bile.

Kidneys.—The right kidney is soft, its capsule smooth, and its external surface pale. On section, the cortex is pale and the cortical markings rather indistinct. The medulla is dark red. The cortex is about 5 mm. thick, and the relation of cortex to medulla varies from 1-3 to 1-4. The pelvis is smooth. Both kidneys are alike.

No other organs were removed.

Anatomic Diagnosis.—Acute yellow atrophy of the liver. General icterus. Ecchymoses of stomach and skin of face. Ascites. Pulmonary edema and congestion. Cloudy swelling of kidneys. Acute splenitis. Sclerosis of aorta (slight). Rib furrows in liver. Calculi in liver.

MICROSCOPIC EXAMINATION.

Liver.—Sections from the yellowish areas where the lobules are large show the arrangement of the liver cells in columns to be preserved. Many cells appear normal. Others present a more or less granular, partly unstained cytoplasm. Some cells contain yellowish pigment. Many polymorphonuclear cells have found their way between the columns and also in gaps between individual cells. There are also large areas made up of portions of adjoining lobules in which the liver cells are necrotic. Their nuclei fail to stain and the outline of the shrunken cell-remains are hard to distinguish. In such areas, the polymorphonuclear and other round cells are very numerous. The periportal tisue is highly cellular, mononuclear round cells predominating. There seems to be a slight degree of new formation of small bile ducts, rows of small, deeply staining cells being seen, with imperfect lumina.

In the red areas the changes just mentioned, viz., necrosis of liver cells, leucocytic invasion, interstitial proliferation, and regenerative efforts on the part of the bile ducts, are much more advanced. All liver cells are more or less necrotic, and in large areas almost none are present, blood capillaries and the various invading cells being left. The capillary walls are altered, generally appearing thickened and homogeneous, taking a faint bluish-gray stain with hematoxylin. Many new and imperfectly formed bile ducts are seen. Mitotic figures in the lining of the new ducts were searched for in vain. Most of the inflammatory round cells are of the appearance of small lymphocytes; some cells have the characteristics of plasma cells.

Sections stained by osmic acid (Marchi procedure) show but little fat to be present in the degenerated cells.

CASE 3.—The case under consideration concerns a young man of American parentage, 20 years of age, who died at the Englewood Union Hospital, Chicago, March 28, 1904, in the service of Dr. J. S. Hunt, to whom we are indebted for the following history:

History.—G. M., a bookkeeeper, was a rather delicately built young man, with a family history of tuberculosis in

several of his immediate family; personal habits, good; venereal infection denied. He was apparently in normal health until one morning in the middle of February, after attending a dance, when he noticed that he was jaundiced. During the next week he was able to attend to his work, but felt a good deal of lassitude, with loss of appetite, and constipation. There was slight pain in the epigastrium, but no vomiting. The jaundice continued, his symptoms increased, and, about March 17, he became unconscious. On March 19, still unconscious, he was admitted to the hospital. At the time of entrance he was slightly delirious, with involuntary bowel movements, retention of urine, and vomiting of bloody fluid. This condition continued until his death, about six weeks after the onset of the illness. Most of the time the temperature was normal or subnormal until a few hours before death, when it rose to 103°. The jaundice was very deep. The urine was bile stained; leucin and tyrosin were not found, but no attempt was made to determine their presence except by microscopic examination of the sediment. The liver dullness was found to be somewhat less than normal, and there was extreme tenderness beneath the right costal arch. Dr. Bacon and Dr. E. Kuh also saw the case, and a diagnosis was made of acute yellow atrophy of the liver.

AUTOPSY.

Autopsy was performed at the hospital 3½ hours after death, and the report of the findings is as follows:

External Appearance.—The body is that of a slenderly built, poorly nourished young man, 169 cm. long. The skin throughout is of a bright yellow color, deeper than lemon-yellow. Rigor mortis absent; body still warm. There are no external markings of importance with the exception that a number of evidences of hypodermic injections may be seen. The superficial glands are not palpable.

Abdominal Cavity.—The right inguinal ring is open but empty, admitting one finger tip; the other rings are closed. There is very little fat in the omentum, which is free from adhesions. The abdominal cavity contains, approximately, 200 cc. of clear yellow fluid. The vermiform appendix lies coiled on itself, imbedded in a fold of meso-appendix, behind the ileum. It contains two hard fecal concretions. There are no adhesions. The pouch of the cecum at the base of the appendix appears reddened, but smooth and shining externally. There is some edema in the wall of the cecum with ecchymosis beneath the peritoneum. The mesentery has many areas of extravasations of blood between its layers and is generally congested. The mesenteric lymph glands are slightly enlarged but pale, while the retroperitoneal glands are not enlarged. There are no adhesions present. The margin of the liver lies two finger breadths above the costal arch. The gall bladder is adherent to the mesocolon by firm fibrous adhesions. The lesser peritoneal cavity is open. Beneath the peritoneum covering the bowel, occasional congested areas are seen; no such areas are found in the parietal peritoneum. The diaphragm on the right side is at the level of the fifth rib, the same being true on the left side. The sternum is extremely short. There are no visible remnants of the thymus.

Pleural Cavities.—The left pleural cavity is free from fluid. Dense adhesions are found about the apex of the left lung. There are no adhesions in the right pleural cavity.

Pericardial Cavity.—This contains, approximately, 50 cc. of clear fluid.

Heart.—The heart weighs about 250 grams. It is of normal size. The aortic valves appear normal. At the beginning of the aorta some slight sclerosis may be seen; the beginning of the coronary artery is free from sclerosis. There is a slight hypertrophy of the left ventricle. The endocardium is stained yellow. The papillary muscles appear much thickened, while there is no visible increase of fibrous tissue. The tricuspid and mitral valves are normal. The wall of the left ventricle is from 10 to 12 mm. in thickness.

Lungs.—The left lung is of normal appearance and crepitates everywhere except in the apex, where there is nodular consolidation. This area is full of hard lumps, less than 1 cm. in diameter, being found nowhere else except in this area, which is the size of a goose egg. On section, these nodules appear as yellow areas surrounded by hard, dark tissue. There are likewise a number of small cavities present, the largest of which is 1 cm. in diameter, and opens on the bronchi. The right lung crepitates everywhere except for three pea-sized nodules in the upper lobe posteriorly, similar to those in the left apex.

Liver.—This is very small, weighing 970 grams. Its dimensions are as follows: 23x16x9x2 cm. There are no adhesions about the liver. The changes are particularly marked in the left lobe and in the margin of the right lobe. The surface of the left lobe and the margin of the right lobe are decidedly wrinkled, while the upper part of the right lobe is not shrunken and appears much firmer. The left lobe and the margin of the right may be doubled on themselves. On section, the lobules of the shrunken portion are seen to be much smaller, while the lobules of the remainder of the liver tissue are enlarged. The left lobe is of uniform consistence, and is more pliable but not softer than normal liver. The margin of the right lobe is the same except that scattered through it can be felt pea-sized nodules, some of which can be seen protruding on the surface. These nodules are most abundant at the junction of the atrophied and large portions of the liver; in the upper part of the liver these nodules can not be felt. The cut surface of the atrophic portion is of a brownish-red color, becoming lighter yellow in the enlarged portions. The lobules of the large part are enlarged, yellow in color, the centers being darker than the periphery and the cut surface is irregular. The bile ducts are not distended. In the atrophied portion the lobules are very small and of normal color. The small nodules described above on section correspond to islands of yellow tissue lying in the red. The lymph glands at the hilum are enlarged, brownish at the center and pale at the periphery. The gall bladder is not enlarged and is of normal size. It contains a very thick green-black bile. No concretions are demonstrable. The mucous membrane appears normal. Bile ducts are all patent.

Spleen.—This is about normal size, weighing 160 grams. An accessory spleen is present at the hilum, of 15 mm. in diameter. The cut surface appears normal except that the malpighian bodies are not readily seen. Its dimensions are 13x7 cm.

Pancreas.—This shows no changes from normal. The glands about the pancreas are enlarged, brownish in the center and pale at the periphery.

Gastrointestinal Tract.—The esophagus and stomach are full of a thin, bloody fluid. The mucous membrane of the stomach shows no gross changes. A great portion of the fat of the mesentery is partly replaced by a serous fluid. The wall of the bowel appears slightly thickened as if edematous, while the entire length of the bowel contains a dark red material (altered blood). The wall of the cecum is very edematous, but otherwise unchanged. The mucous membrane of the cecum is darkened, corresponding to the reddened area described above, while the mucosa remains intact. The duodenum contains a blood-red fluid similar to that found in the esophagus and stomach. Bile can be expressed from the ampulla; it is very black-green, thick and tarry and does not flow easily. There are no changes in the duodenum. The cystic and hepatic ducts, just above their junction, are not dilated.

Adrenals.—These are both normal.

Kidneys.—The kidneys are slightly larger than normal, weighing together 330 grams. The color of the right kidney is very yellow. The cortex is thickened, averaging 7 or 8 mm. across; the cortical markings are indistinct. The cortex contains many greenish streaks. The left kidney corresponds to the right; the cortex containing a few more green areas.

Urinary Tract.—The bladder contains bile-stained urine. The testicles appear normal.

Anatomic Diagnosis.—Acute yellow atrophy of the liver; general icterus; ulcerative and nodular pulmonary tuberculosis of left apex and of right upper lobe; left apical fibrous pleuritis; parenchymal degeneration of myocardium and kidneys; fibrous pericholecystitis; fatty degeneration and biliary pigmentation of kidney with acute parenchymal changes; hemorrhages beneath the peritoneum; blood in the gastro-intestinal tract; hyperplasia of peripancreatic lymph glands; edema and serous atrophy of fat in intestines and mesentery.

MICROSCOPIC EXAMINATION.

Liver.—Three distinct areas, corresponding to the red, red-yellow and yellow areas of the gross tissue, may be picked out in the miscroscopic sections.

Yellow Areas: Outline of liver lobule fairly well preserved. Liver cords atrophied in center of lobule, but wider than normal in the periphery. Protoplasm is finely granular, vacuolized, and the cells are greatly swollen; nuclei show faintly stained border and a few blue points within, otherwise practically unstained. Many cells contain orange-yellow granules, particularly near the center of the lobule. The staining of liver cells generally is strikingly poor. Many of the small bile capillaries are completely plugged with a brownish mass. Only occasionally can cells be found that appear necrosed; these are generally located in the center of the lobule, and often contain golden-brown pigment in coarse granules. The amount of blood in the capillaries is small. A few leucocytes are present throughout the lobules, particularly in the peripheries. Between the lobules the connective tissue is infiltrated with small, round cells in great numbers, and a few leucocytes. The bile vessels seem to be much increased in number, and often to be filled with a homogeneous yellow-brown material. To sum up: In the yellow areas the parenchyma cells are swollen, stain poorly, and have disappeared to a considerable extent in the center of the lobule; the bile vessels and interstitial connective tissue have begun to proliferate; there is much bile pigment, and the vessels seem to be plugged with secretion.

Red Area: A section taken from this part of the liver does not show a trace of any of the original liver cords. The central vein of each lobule has a thickened wall, which is hyalin. The central part of each lobule is composed of a groundwork staining with eosin, in which are numerous elongated, pale nuclei, together with a few small, round, dark nuclei, and occasional polymorphonuclear leucocytes. Occasional capillaries containing corpuscles are seen, but they are few and small. There is a small amount of brown pigment in the bodies of the cells. The peripheries of the lobules are marked by the presence of large numbers of columns of cells, resembling small bile ducts, the nuclei of which stain deeply, as also does the cytoplasm. They differ from bile ducts in that they contain no lumen, as a rule, and have a distinct tendency to grow into the lobule. When a lumen is present it contains no bile. Mitoses are rare. There are numerous polymorphonuclear leucocytes among and in these tubules, and frequently an eosinophile or plasma cell. There are no changes in the portal vein or hepatic artery. The capsule of the liver is thickened and wrinkled, and the size of each lobule is reduced very greatly. Van Gieson's stain shows that the material filling the center of the lobule is composed of fine fibrils of connective tissue running from the center towards the periphery of the lobule; it appears that the amount of connective tissue in the lobule is not really increased, but rather made more prominent by the disappearance of the liver cells. Sections taken from the point of junction of the yellow and the red portions show merely various degrees of absence or presence of liver cells in the center of the lobules. No matter how few the cells that are left, they preserve the same characters as those seen in the yellow areas; the marked necrosis of liver cells so prominent in some instances of acute atrophy is wanting in this specimen.

Sections stained by sudan III show surprisingly little fat. In the yellow area there is practically no fat to be found in the swollen cells, but those in the center of the lobule that are greatly atrophied often are full of fine droplets. The proliferating duct cells are free from fat. It is evident from the section that fatty degeneration is not a prominent part of the process.

Gall Bladder.—All that is left of the epithelium is a granular eosin-staining material, occasionally showing outlines of the cells. This loss of stain extends into the tissues of the wall of the gall bladder as far as the deeper muscular layers. There is no sharp line of demarcation between the necrotic and the living tissues, and no evidence of inflammatory reaction. In the areolar tissue, outside the muscularis, are many cells with small, dark nuclei, and considerable cytoplasm; occasionally they are collected in groups with a small amount of a stringy hematoxylin-staining material between them. There are very few leucocytes.

Bile Ducts.—Section through the hepatic and cystic ducts near their junction shows an absence of the changes seen in the gall gladder. The epithelial cells are partly desquamated, but, where present, stain well.

Lung.—The tissue is the seat of an active tuberculosis, as shown by the small and large foci of round cell infiltration: miliary, caseous and fibrocaseous tubercles; and coalesced necrotic areas. The section borders on a large abscess wall containing cytoplasmic and nuclear detritus. The alveoli are wanting, being replaced for the most part by fibrous tissue. In some areas, the alveolar wall epithelium is changed to a distinct columnar type. A few giant cells and fibrin are present; fat globules are present in alveolar epithelial cells. The tissue throughout shows marked congestion and hemorrhage.

Spleen.—The malpighian bodies are small and far apart, their germinal centers occasionally indicated; otherwise no changes. The pulp is much increased in amount by "endothelial hyperplasia," and there are also many eosinophiles, with only a moderate amount of other leucocytes. No pigmentation or other changes are present. The accessory spleen is no different. Phagocytes and plasma cells are practically absent.

Pancreas.—This shows no changes.

Stomach.—The mucosa is covered with masses of coalesced red corpuscles; otherwise there are no changes.

Adrenals.—No changes.

Kidney.—The malpighian bodies show no changes. The epithelium of the convoluted tubules is swollen, granular, faintly stained, and often the nuclei are invisible. In many tubules bile-stained casts are found, and greenish pigment is present occasionally in the epithelium of the convoluted tubules. By sudan III many fat granules are found at the base of the cells of the convoluted tubules.

Lymph Glands.—Section from the gland at the hilum of the liver shows that the germinal center of the lymph nodes are masses of nuclei, staining intensely blue. Sinuses show much "endothelial hyperplasia." Eosinophiles are abundant, particularly in the nodes and leucocytes are also numerous.

Myocardium and Testicles.—Show no changes.

BACTERIOLOGIC REPORT.

The following organisms were isolated from cultures made at the autopsy:

From the Kidney: 1. A micrococcus, arranged in chains, was found in bouillon after 24 hours. It did not develop on plating. Staining with methylene blue and Gram's showed a streptococcus. 2. A short bacillus, diplococcus forms, appearing very frequently. Capsulated in hanging drop. Stained with methylene blue—destains by Gram's. This organism gave the cultural characteristics of *B. mucosus capsulatus.* It was also found in the heart's blood and liver.

From the Heart's Blood and Liver.—A micrococcus, arranged in bunches. Staphylococcus forms. Staining by methylene blue and Gram's method shows characteristics of *staphylococcus pyogenes aureus. B. mucosus capsulatus* was also obtained accompanying the staphylococcus.

CASE 4.—We have also had the opportunity of examining

microscopic specimens from a case observed by Dr. George H. Kennett at Missoula, Mont., in October, 1902, the details of which he has kindly permitted us to publish.

History.—F. M., a mail clerk, age about 35 years, had been feeling poorly for five or six weeks, and was thought to have catarrhal jaundice. He kept on working and at first was not confined to bed, but at last entered the Northern Pacific Hospital in Missoula. After he had been in the hospital a week he was found one morning in deep coma and with profound icterus. The preceding evening he had been as well as usual. He lived for three or four days in a comatose condition. The lower border of the liver dullness was noticed to recede two or three fingers' breadth. The urine contained bile, but although leucin and tyrosin were looked for with the microscope they could not be found; the urine was not concentrated, however, nor was any chemical examination made. The symptom that attracted most attention was an unbearable stench from the body, so bad that no one was able to be near the patient for any length of time. The odor was said to bear a slight resemblance to that of bromidrosis.

AUTOPSY.

The autopsy was limited to an examination of the abdominal cavity. It contained no free fluid. The liver measured 23 cm. from side to side, 14.5 cm. antero-posteriorly, and 5.5 cm. from above downward, and weighed 880 grams. The capsule was smooth, but wrinkled over the left lobe, which was thin and very flabby, while the right lobe was fairly firm. Under the capsule many dark red spots were seen, the largest 1 cm. in diameter. The cut surface was of a pale yellow color. In the right lobe the lobular markings were fairly distinct. Dark red spots were scattered over the cut surface, in places coalescing to form larger areas. In the left lobe the lobular markings could not be made out, and a few small hemorrhagic spots were also seen here. The gall bladder measured 5.5x1.5 cm., and contained dark bile of syrupy consistence. The bile ducts were patent, as bile would flow from the ampulla into the duodenum when the gall bladder was squeezed.

The spleen measured 14x7.5x3 cm., and weighed 240 grams. It was of a dark red color.

Each kidney weighed about 175 grams. The capsules were not adherent, the cortical markings were not distinct, and the pyramids were deep red in color.

No further notes were made of the gross examination.

MICROSCOPIC EXAMINATION.

Sections made from pieces of the liver, spleen and kidney, fixed in Zenker's fluid, were given us by Dr. Kennett.

Liver.—Left lobe: The greater part of the section is made up of necrotic parenchyma, in which all trace of the arrangement of the cells into columns is lost. A moderate number of fat holes is seen in this tissue, and small hemorrhages are present. Only shadows of liver cells can be made out, while there are a great many mononuclear round cells. Polymorphonuclear cells are infrequent. Small clumps of greenish pigment are seen here and there. A relatively small part of the section is made up of islands of preserved liver tissue columns of variable size; nowhere is a whole lobule found preserved. The cells are swollen, their cytoplasm very granular, frequently containing small vacuoles which occasionally are very numerous in a single cell. In most of these cells the nuclei are preserved. The larger the cluster of liver columns the less advanced the changes are found to be. The interlobular connective tissue is normal in quantity, and not very rich in cells. There is only a slight proliferation of bile ducts in this case.

Right lobe: Here the sectional area occupied by preserved columns is considerably greater and the degenerative changes in their cells less advanced, but of the same kind as in the left lobe. Between the columns necrotic tissue, like that described in the left lobe, is seen. It is of similar appearance with the exception that the number of fat holes and the proportion of polymorphonuclear cells is greater. Otherwise the section answers to the description given of the left lobe.

Spleen.—Shows extreme hpyeremia, the vessels and pulp sinuses being dilated and engorged with blood. In the pulp, many polymorphonuclear cells are seen, and phagocytes containing greenish-yellow pigment. The pulp is increased in amount, the malpighian bodies and trabeculæ are normal.

Kidney.—Here the principal change is in the convoluted tubules, the epithelium of which shows extensive necrosis. Most of the cells are disintegrating and the lumina are filled with cell débris. Only a few epithelial cells retain their nuclei. Here and there small deposits of greenish pigment may be seen in the degenerating cells. The straight tubules and glomeruli are practically normal. There are no interstitial changes.

It can not be said that our cases add anything to the obscure subject of the etiology of acute yellow atrophy. The bacteriology in the cases in which it was followed out was as uncertain as is generally the case, for the results reported in the literature are most discordant, no one organism being found with sufficient frequency to entitle it to special consideration. The diversity of the predisposing and exciting causes that have been suggested to explain the etiology of this disease is so great as to lead many to the conclusion that very possibly the cause is complex, and that many conditions can, under certain circumstances, lead to the anatomic picture that is considered typical. This seems especially probable if we consider the number of more or less closely associated conditions found in the liver from quite different causes. As generally known, phosphorus poisoning most closely resembles acute yellow atrophy. It is perhaps not so generally appreciated that other forms of intoxication may lead to changes resembling those of acute atrophy, either grossly or microscopically. For example, after chloroform anesthesia a symptom complex may arise similar to or indistinguishable from, that of yellow atrophy. Ballin reports nine postoperative cases of acute yellow atrophy, but it is by no means certain that the changes of the liver produced by the anesthetic are identical with those of this disease. One of the earliest changes of yellow atrophy seems to be a degeneration beginning in the center of the lobules, developing into a necrosis, which in time involves nearly all the lobule, but which at first is more or less a central necrosis. With these changes may be compared the central zonal necrosis of the liver lobule so frequent in various intoxications, such as diphtheria, streptococcus septicemia, acute endocarditis, pneumonia, and also in more obscure intoxications such as puerperal eclampsia. Yet there must be some quite sensational difference between the necrosis from these common intoxications and that which initiates acute yellow atrophy, for it would seem that otherwise the latter would be much more common than it is.

It is quite possible that we may gain a better insight into this perplexing disease through the newer investigations concerning the processes of self digestion of cells, or autolysis. Salkowski has shown that any aseptically preserved organ is capable of digesting itself at a fair rate, when kept at body temperature, with products quite similar to those of ordinary tryptic digestion, including among them the leucin and tyrosin so characteristic of intestinal digestion. Autolysis has been considerably investigated in both physiologic and pathologic bearings, and found to be a process of importance in many pathologic conditions, such as the absorption of pneumonic exudates, the liquefaction of necrosed but aseptic tissues, and in suppuration. In acute yellow atrophy we are forcibly reminded of the processes of autolysis, for

in it we find an absorption of as much as a kilogram or more of liver tissue within a few days or weeks, and at the same time the appearance of products of proteolysis in the urine. It has long been taught that the reason for the appearance of leucin and tyrosin in the urine in this disease is the throwing out of function of a large part of the liver tissue, so that these nitrogenous bodies being brought to it by the portal blood from the intestines are not converted into urea as they normally are, and so passed to the kidney to be eliminated. Indeed, this has been much used as an illustration of the function of the liver in the formation of urea from amido-bodies. But with an understanding of the possibilities of self-digestion in the liver it becomes a question if part of the leucin and tyrosin may not be derived from the autolysis of the liver cells, if not all of it.

Taylor[2] analyzed a liver showing the changes of acute yellow atrophy and weighing 900 grams, and found that it contained probably as much as 2 grams of leucin and asparaginic acid, and the watery extract contained deutero-albumose but no true peptone. From one liver in a condition of "chloroform necrosis" resembling clinically acute yellow atrophy he obtained 4 grams of leucin, 2.2 grams of tyrosin, and 2.3 grams of arginin nitrate. These results show conclusively that in both acute yellow atrophy and other forms of hepatic degeneration the products of digestion can be found in the liver itself in no inconsiderable quantities, despite the fact that by far the largest part of that which is formed must be rapidly carried away in the circulation. Whether this autolysis of the liver is to be considered the chief source of leucin and tyrosin found in the urine during the course of the disease must remain an unsettled question until we have more complete data concerning the total elimination of nitrogen in its different compounds during the entire disease, a difficult matter because of the infrequence of the cases.

Neuberg and Richter[3] have made an analysis of 345 c.c. of blood from a case of acute yellow atrophy, and found 0.787 gram of tyrosin, 1.102 grams leucin, and 0.240 gram of lysin, making a total of 2.13 grams of amido-acids. On this basis the entire circulating blood should have contained about 30 grams. They believe that these amido-bodies can not be derived solely from hepatic autolysis, since if the entire liver were digested, it would only yield about the same amount of tyrosin as they showed to be present in the circulating blood. As the elimination of urea was not altered, they do not accept the old idea of a diversion of the nitrogen from its normal metabolism and elimination as amido-acids. Nor did it seem possible that these bodies came from autolysis of the blood. It is possible that they came in part from the intestine, passing in abnormally large amounts through the diseased intestinal wall, and perhaps accumulating in the blood because of the diseased condition of the kidneys. This assumption, however, is based on a greater degree of intestinal involvement than is generally found, and fails to explain the failure of leucin and tyrosin to appear in the urine in still greater quantities in conditions associated with greater lesions of the intestines; unless we admit that the liver plays an important part in converting such substances normally and is hampered by the pathologic changes present in acute atrophy. In other words, it is difficult to tell just what relation intestinal and hepatic disturbances bear to each other and to the disease itself, in acute yellow atrophy of the liver.

In attempting to correlate the processes of autolysis with the changes usual in acute yellow atrophy we need to take into account certain facts that can be applied. First of all we have a marked necrosis involving all the cells of lobules in large areas of the liver, and sparing other areas, and also sparing the connective tissues of the lobules that are involved, the blood vessels and the interlobular bile ducts. In many cases greater or less degrees of regeneration have been observed, and it is found to consist of a general proliferation of the surviving cells, both of connective tissue and of bile duct epithelium. The former multiplies and leads to a large excess of connective tissue, which would undoubtedly prevent the liver from ever again becoming normal if recovery occurred. The bile ducts of the epithelium reassume their embryologic function, and from them are developed many new cords of liver cells, growing between the original strands of intralobular connective tissue which have survived the necrosis within the lobule. It would seem, therefore, that we are dealing with an intoxication by a substance with a considerable degree of specificity for certain cells, those of the hepatic cords, which spares even so closely related cells as those of the bile ducts. The fact that different parts of the liver are affected to such different degrees, and that the process is found in different stages of advancement in different areas at the same time, rather speaks against the idea that the changes are brought about by some substances absorbed from the intestines, for it would be expected that in this case the process would be more diffuse; conversely, this irregularity of distribution would speak more for a local origin of the necrogenic substances.

The relatively slight involvement of the bile ducts speaks against the conception of an ascending biliary infection or intoxication which has often been suggested. One of the most interesting hypotheses advanced to explain the etiology of acute yellow atrophy is that of Quincke, proposed by him several years ago, but so far as we know not studied further either by him or by any one else. His idea was that through an occlusion of the ampulla of Vater the pancreatic juice might be forced back along the bile tracts, and lead to necrosis and rapid digestion of the liver cells, thus producing the features of acute yellow atrophy. This is an attractive hypothesis, especially as in a considerable number of cases gallstones have been found; in our second case two small stones were found within the liver substance. There are many objections, however. The first is that in but one case so far reported has an obstruction been found in the ampulla. More important is the fact that the bile pressure is greater than the pressure of the pancreatic juice, and as has been well proven by Opie the result of occlusion in the ampulla is not an escape of pancreatic juice into the biliary system, but rather an escape of bile into the pancreas, resulting in pancreatitis, fat necrosis, etc. Still it might be imagined that under unusual conditions a reverse peristalsis might force the pancreatic juice into the liver. Mr. Charles L. Best[4] has performed a number of experiments, to test Quincke's theory, in our laboratory. Commercial pancreatins were injected into the common bile ducts of cats, dogs and rabbits, above a ligature, and in some animals the pancreatin was in-

2. Taylor: Zeit. f. Physiol. Chem., 1902, xxxiv, 580, and also Jour. Med. Research, 1902, viii, 424.
3. Deut. med. Woch., 1904, xxx, 499.
4. Best: Thesis, the University of Chicago, 1903, "Acute Yellow Atrophy of the Liver."

jected directly into the liver. In a few animals some degree of central necrosis of the liver lobules was produced, but in none were changes observed that approached at all closely those of acute atrophy. Of course, such experiments do not exactly reproduce the conditions as they would exist in a human being, and are only suggestive in a negative direction.

The necrosis in acute yellow atrophy seems to differ from ordinary necrosis in the rapidity and completeness with which the necrosed cells are digested and absorbed. It resembles the resolution of lobar pneumonia more closely than anything else, but differs in the absence of any considerable number of leucocytes. This fact may be taken to indicate: First, that the poisons are so specific for liver cells that they are injured to a greater degree than other cells, so that it is possible for the patients to survive the necrosis for a considerable time during which autolysis is going on; second, that as in pneumonia the circulation through the diseased tissues is not seriously impaired, so that absorption is possible; third, that the absence of leucocytes makes it probable that the autolysis is brought about by the diseased liver cells themselves.

This last idea requires the assumption that a cell may be killed and still retain autolytic powers, which has been abundantly demonstrated to be the case; it is seen particularly well when necrosis results from the shutting off of the blood supply, as in infarcts, when the conditions are somewhat similar to what they are in an organ removed from the body, and kept in the incubator in an aseptic condition. On the strength of these facts one might conceive as an explanation of acute yellow atrophy the poisoning of the liver by some substance which has a specific affinity for some vital ingredient of the liver cells, but which does not affect the autolytic ferments of these cells. Such changes as are typical for this disease might readily follow, for example, the destruction of the oxidizing ferments of the liver. The cells would then of necessity die, yet the autolysis would go on as in an infarcted area, only much more rapidly, because circulation is still present to remove the products as fast as formed, thus greatly hastening the reactions. In connection with this it may be brought forward that in phosphorous poisoning of dogs, which of all conditions most closely resembles acute yellow atrophy, Jacoby found the products of digestion in the livers, just as Taylor found them in the liver of a person dying from acute yellow atrophy, and also that Jacoby has showed that autolysis is very active in livers of phosphorous poisoning. Indeed, he found autolysis to be more rapid in livers from cases of phosphorous poisoning than in normal livers; the effects of the degenerative changes in favoring digestion might account for this.

One other point concerning the chemical changes of acute yellow atrophy may be mentioned. The statement is often made that the chief change is fatty degeneration, probably because the yellow color is thought to be due to fat, although as a matter of fact it is chiefly, if not entirely, due to bilirubin; this can be shown by putting a section of the fresh liver into dichromate solution, when the yellow turns to green because of the oxidation of the bilirubin into biliverdin. Taylor found in the liver which he studied that there was no increase in the fats over the normal amount, which is from 20 to 60 grams, whereas a liver the seat of fatty degeneration may contain from 400 to 500 grams of fat. In the two cases of this series in which the frozen sections were stained for fat there was found to be surprisingly little fat in the degenerating liver cells in any stage.

DELIRIUM AS A SYMPTOM OF HYSTERIA.

REPORT OF FOUR ILLUSTRATIVE CASES.*

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As it is well known, delirium constitutes the final phase of classic attacks of major hysteria as depicted by Richer and copied in many text-books. But the whole subject of insanity, in relation to hysteria, is apparently in more or less confusion and doubt in the minds of many who have written on the subject. Doubtless, as pointed out by Raymond and Janet,[1] this is in a large measure due to the fact that such cases, as a rule, are not in their continuity studied by the same medical men; since they usually fall under the observation of physicians outside the asylum at first and later come under the observation of the asylum physicians. Thus, it happens that the first-named physicians are able to study only the earlier manifestations and the last-named the later manifestations, with the result that both sets of observations are incomplete and deficient. While the removal of the patient to the asylum is purely for the purpose of securing control of him, the idea is only too prevalent that this move somehow changes the diagnosis from that of "nervous disease" to that of "insanity." The asylum physician, accustomed to dealing only with "insanity," is too prone to accept this dictum, to put one of his approved labels of insanity on the patient, frequently with little or no knowledge of the preasylum history. It may be remarked in passing that we have here a strong argument in favor of opening asylums to physicians outside them, and for asylum physicians to study patients outside the asylum as much as possible.

Since we recognize hysteria as an essentially mental disease, or, in the language of M. Sollier, "A mode of brain function," we ought to be prepared to recognize manifold mental symptoms as hysterical in character when certain criteria are present. Oddly enough, certain authors seem willing to call certain mental symptoms hysterical when they are not prolonged or profound, but fly to the designation "insanity" when the symptoms become more striking in type or pass a certain limit.

Among the mental symptoms recognized by various authors may be mentioned mutism, lethargy, somnolence, sleep-walking, catalepsy fasting, mania, depression, hypochondriasis and delirium.

The question of delirium as a symptom of hysteria has been so well considered by Janet[2] that I quote him somewhat at length:

> We often meet hysterical deliriums quite permanent among children. M. Jolly has recently dwelt on these little patients who commit all manner of foolish things and seem to play a farce before their frightened parents. A number of authors—Briquet, Marce, Morel, J. Falret, Grasset, Krafft-Ebing, Schule—have established that hystericals, even adults, can

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1. Neuroses et Idees Fixes.
2. The Mental State of Hystericals.

have deliriums of a maniacal form, deliriums quite prolonged and without any precise relations to the attack.

A disease is not an immutable entity, easily recognizable. It is a classification of symptoms grouped for the convenience of our mind. Hysteria is but a syndrome, an ensemble of facts grouped in a general idea, which facts are nearly all moral facts; they are forgetfulness, insensibilities, which are psychologic phenomena. There is no valid *a priori* reason to refuse to bring within this framework deliriums that are simply other mental phenomena. Besides these authors themselves scarcely apply their doctrines in their extreme sense, for they accept the delirium of the attack, and even anorexia, which is, to a supreme degree, a delirium of long duration. We may, then, consider certain deliriums as hysterical.

But should we for this reason fly to the opposite extreme and affirm that all the deliriums that present themselves in patients having or having had a few stigmata should be included within the range of hysteria? This inclusion would find great inconveniences. Some of these deliriums do not differ from others which befall equally non-hysterical people. Must all these innumerable phenomena be connected with hysteria? That would altogether confuse the analysis of the symptoms of hysteria. We would select among all these accidents those that come within our conception of hysteria.

This selection is extremely difficult, but it is an ideal which nowadays is far from being always possible. In order to be able to do it we ought to recognize two characteristics in a delirium: 1. Is this delirium the consequence of a clearly hysterical phenomena? This first characteristic is important; it allows us to eliminate febrile deliriums, toxic or otherwise, which hystericals may have in common with other patients. We have repeatedly shown that the delirium was, in the case of certain patients, but the aggravation of an anterior symptom. But this characteristic is far from being sufficient; for, to our mind, a hysterical symptom may by aggravation be completely transformed. 2. It would be necessary, even in delirium, to establish the fundamental character of the mental state of hysteria: The undoubling (*dedoublement*) of the mind, the alternation of the states of consciousness, the formation of phenomena really subconscious.

I now desire to present for your consideration the histories of four cases, which I have diagnosed as hysteria in a more or less tentative way, in which marked and more or less prolonged delirium was a symptom, together with the points which, to my mind, indicated the diagnosis in each case.

CASE 1.—An unmarried girl, aged 21 years, was admitted to St. Francis Hospital July 9, 1902.

History.—Her family history was negative. The only significant fact elicited in her personal history was a "jilting" on the part of her lover, which had occurred a few days before her admission. Five weeks before admission, for the first time in her life, she was seized with a violent general convulsion, during which she was unconscious and which was preceded by a severe headache. Six or seven hours later two more convulsions occurred. Each of these three seizures began in the feet and lasted about fifteen minutes. Twenty hours later two more convulsions occurred, each of about five minutes' duration. About July 1, nine days before admission, the patient was seized with a "loud talking spell," during which she called for almost everybody she knew, especially her fiancé. A period of mutism, during which she seemed to understand all that was going on about her, now followed and continued up until admission.

Condition in Hospital.—The patient was at once put to bed. She was mute, but not stuporous nor comatose. She was oblivious as to her surroundings, refused to eat, and was nourished for weeks with the stomach tube. Her temperature was 102 F. During the next week it was very irregular, ranging from 101 to 105.4. During the next week it was lower and the variation was much less, being from 100 to 101. During the subsequent two weeks the temperature gradually declined to the normal mark.

August 11: The nurse reported two "epileptic fits."

August 15: Another "fit." Unconscious for five minutes; bit tongue (?). Slept after the "fit."

The condition of the mutism continued until August 21, when the patient screamed and cried a good deal. Asked why, she said she had her brother's legs. Presently she relapsed again into mutism.

August 23: Quite noisy from 11 to 1 o'clock last night. To-day asked to go home. Mental confusion is shown in her conversation.

August 26: The patient took dinner at the table. She has been eating voluntarily during the past few days. For the first time she talked to me freely. She cried a good deal and asked to go home, stating where she lived. She is emaciated and bears the appearance of one who has gone through a serious illness. Examination revealed the presence of universal analgesia.

After this date the patient's mental and physical improvement were steady until October 14, when she was discharged, apparently well, no "fits" having occurred in the interval. A letter from the patient, dated April 1, 1903, nearly six months after her discharge, states that she has suffered from no "fits," has gained twenty pounds in weight and feels quite "as good as ever." A second letter, dated Jan. 3, 1904, states: "I am enjoying the best of health and have been since I left the hospital. As for the spells, or 'fits,' I have not had any of them." She also states that she did not remember going to the hospital, and only began to remember things after she got up and was going around.

The history of the outset of this case led to the suspicion that a brain tumor or abscess was producing the symptoms. This diagnosis was soon excluded. The diagnosis was then in doubt for many days. Typhoid fever, autointoxication, deep-seated abscess and general miliary tuberculosis were among the conditions whose possibilities were considered. The spleen was not enlarged, and the Widal blood test was reported negative. Tympanitis was not a symptom. During the first week of severe fever the patient was repeatedly examined by various members of the staff at St. Francis' Hospital. Dr. McKennan was, I believe, the first to suggest the diagnosis of hysteria, which I myself came to accept finally as the most probable one.

The points supporting this diagnosis are briefly these, considered separately and as a whole: The convulsive seizures at the outset, after the unhappy "love affair"; the screaming spell followed by weeks of mutism, without stupor; the passage of mutism into a delirious condition, during which several "fits" occurred; the presence of universal analgesia; the rapid convalescence, with freedom from "fits" of any sort; the permanence of the recovery.

How is the fever to be accounted for? It is supposable, I think, that a hysterical operation of the sympathetic system may have so changed the relationship between anabolism and katabolism of the body that a species of autointoxication was set up; or that it might have resulted from defective operation of the heat centers, whose operation was irregular—ataxic—and whose resultant activity was hysterical.

While it seems to me that this case is one of pure hysteria, and certainly one with hysterical manifestations, yet the course and the curve of the fever were much like those seen in typhoid fever; and I am even now not absolutely certain that this diagnosis should be excluded.

The later emaciation, too, argued for the antecedent ravage of an acute febrile disease of toxic character. But even if typhoid fever were allowed, it could not fully explain the symptoms which, in part at least,

were almost certainly hysterical in character. Moreover, it is to be noted that symptoms of hysteria were present both before the outset of the febrile symptoms and also after their close; and this fact, in connection with the negative evidence of the absence of several of the important diagnostic signs and symptoms of typhoid fever, positive Widal reaction, enlarged spleen, tympanites, diarrhea, offers the strongest argument in favor of the theory that all the symptoms were expressions of hysteria. There can be no doubt that marked changes in body temperature may occur as an expression of hysteria. I have just reported a striking example[3]; and Regal and Hanat[4] report a case of hysterical pseudotyphoid fever in a young woman who had nursed three cases of typhoid fever. On the whole, I much incline to the view that all the phenomena seen in this remarkable case were due to hysteria. The view that we have here a case of major hysteria during the course of which typhoid fever developed and subsided, has much less to commend it to my mind.

Not long after my experience with this case I saw a young Russian girl, who had come to Pittsburg to marry a young countryman. After seeing him she decided that she could not marry him, and the engagement was broken off. She was much dejected, was seized at short intervals with a series of severe and prolonged general convulsions, during which she was quite conscious. The patient was isolated at the South Side Hospital. The case so developed in the course of a few days (tympanites, diarrhea, enlarged spleen) that Dr. J. P. Kerr and I regarded it as one of typhoid fever; and subsequent developments bore out this diagnosis.

The most probable explanation of this case, to my mind, is as follows: The severe moral shock produced great depression of vital tone, which not only brought out the hysterical convulsions (temperament being favorable), but also rendered the patient peculiarly liable to the operation of the typhoid bacillus which is ever present in our Pittsburg drinking water, and to the operations of which newcomers in our midst are especially liable.

So it will be seen that for this case I accept a theory very like that which I have rejected for the preceding case.

CASE 2.—A woman, aged 29.

History.—The patient was unhappily married; her husband had treated her coldly for several years and had finally deserted her. For several years past she had been subject to severe left-sided headaches, which had grown worse since her separation from her husband, and in general she was neurasthenic. She went to a sanatorium on April 12, taking while there a semi-rest cure. She did well, apparently having gained in every respect. Two days before the time set for her departure for home she was playing croquet, and, after a spirited contest, she won her third game. Immediately afterward, for the first time in her life, she was seized with a severe general convulsion. This was shortly followed by two similar seizures of less severity. Consciousness was probably preserved during these attacks. A few days later she was brought home. Her mental condition was one of delirium, with shifting hallucinations and disorder of orientation and unsystematized delusions. She said the doctor was a baboon; that snakes were in her head, and that her body contained much glass. She spoke of seeing Adam and Eve in the Garden of Eden. On several occasions her body became stiff for a time; again, she assumed fixed attitudes with her hands above her head or crossed in front of her, and she would so remain for many minutes. She would not stay in bed, but got up often and walked about the room in a slow, aimless fashion. She made a number of attempts to get out of the windows, without any apparent definite idea of suicide.

Examination.—I saw the patient, with her physician, Dr. Pershing, on July 24, 1902, for the first time. The day before she executed a series of apparently voluntarily slow but strong rotary movements with her left hand. It was difficult to get her to talk much, and then only in answer to questions. Her replies were simple and direct, but a considerable period of time elapsed between the question and the answer. Her face presented a vacant expression, with a curious smile playing about the mouth. She made no resistance to passive movements. "Negativism" was not a symptom. Universal analgesia was present, partial in the face, complete elsewhere. The general muscular strength was greatly diminished, the hand grasp being especially weak. This lack of muscular force may have been (probably was) more apparent than real and due to her mental condition. The examination in other respects was negative. The tongue was heavily coated; the breath foul. There was no elevation of temperature.

Subsequent History.—After two or three weeks the patient began to improve and continued to do so more or less steadily for three or four months, when she again seemed to be as well as usual, and she has so continued. Two months after the outset of convulsions the patient went to Denver, where her convalescence was much hastened. Only a month ago she nursed her mother through a fatal illness and showed no signs of breakdown as a result thereof.

Here was evidently a species of insanity, a delirium characterized by shifting and disconnected hallucinations and delusions ushered in very suddenly by several convulsive seizures; and the disorder was doubtless attributable to the moral shock mentioned, with its ensuing vital and psychic depression. The case bore a certain resemblance to dementia præcox, the delirious mental state and the stereotypy suggesting at first sight this diagnosis to my mind. But, on the other hand, the sudden outset with convulsive seizures argued strongly for hysteria. Subsequent visits led me to believe that the delirium and stereotypy were in themselves, with their vagaries and disjointedness, strongly suggestive of major hysteria. The negativism and obsessions of dementia præcox were absent.

The consideration of the foregoing points, together with that of the favorable outcome, seem to me to indicate, then, that this case was one of major hysteria.

CASE 3.—A single woman, aged 50. She was a small woman, of delicate frame, naturally sensitive and retiring in her nature and accustomed to refined surroundings. She had no serious illness, except an attack of typhoid fever in 1870, from which she fully recovered. She passed the climateric a few years ago.

History.—Early in 1899 she complained of painful defecation and stated that for some months past she had suffered from constipation. She also suffered from frequent derangements of the stomach, headaches, pains in the lumbar and sacral regions, loss of strength and general fatigue, particularly noticeable in the legs. Her temperature was normal; pulse accelerated and weak.

Examination.—Examination by her family physician discovered four fissures of the anus extending through the mucous membrane. The anus was forcibly dilated and the fissures treated by application of nitrate of silver. This operation produced extreme prostration. The pulse became thready and weak, frequent attacks of nausea recurred and the patient was often delirious when asleep. After several weeks she began to improve, and on Sept. 12, 1899, she went away on a two weeks' visit, from which she returned somewhat improved in her general condition.

3. Medical News.
4. Quoted by Dejerine, Semiologie du Systeme Nerveux, p. 1087.

Subsequent History.—During December, 1899, all her old symptoms returned. On Jan. 16, 1900, another examination revealed a slight fissure "hardly more than a red streak in the mucous membrane." The same treatment was applied, but with little effect. Prostration ensued as after the first operation, and on March 21 the patient left the hospital but little improved. An examination in May by a consultant discovered nothing abnormal in the bowel, and an examination by a second consultant, a gynecologist, a few days later, revealed a normal condition of the pelvic organs. The symptoms were now believed to be neurotic in character, and in July, 1900, the patient was sent to a sanitarium, where she remained until Dec. 19, 1903. Here she improved a great deal, although still subject to acute attacks of "dyspepsia." During the summer of 1903 she was acting as an employe in the sanitarium. A change in the management of the sanitarium, attended with very trying circumstances, occurred at this time, which caused the patient much worry and apprehension, since she feared she would lose her position. During the fall of 1903 many of her old symptoms returned, and now to these were added mental symptoms, delirium with confusion and screaming attacks. She was removed to St. Francis Hospital on Dec. 19, 1903. Here the delirium and confusion were for several weeks very marked and the screaming attacks were of frequent occurrence. For a time the patient seemed to fail entirely to orientiate herself to time and place or to recognize her friends and relatives. The screaming spells were markedly influenced by suggestion, a firm command usually succeeded in quieting her for a time. During February improvement began and continued until the early part of March, when the patient was discharged, apparently restored to mental health and complaining of no physical symptoms.[5]

The patient presented an appearance of one prematurely aged, and it was at first thought that the symptoms were the outcome of vascular degeneration, although the palpable arteries were not manifestly sclerotic. But the peculiar character of the delirium and the screaming fits, which were markedly influenced by suggestion, the comparative suddenness of the onset of the mental symptoms, a consideration of the previous history of the patient (mental symptoms following a mental shock, neuropathic constitution, etc.) led to the diagnosis of hysterical delirium; and the favorable prognosis given was justified by the subsequent events, which also lent support to the diagnosis itself.

CASE 4.—A married woman, aged 50, mother of two children.

History.—There is a neuropathic strain in her family. The patient has always been stubborn and self-willed and accustomed to having her own way. Early last fall she contracted a case of severe articular rheumatism. On November 8 (influenced by reading a medical treatise in which fasting is recommended for various ailments) she began a fast which, despite frequent earnest and urgent appeals to eat, she strictly maintained for 56 days, taking during this period nothing but water. Soon after she began to fast she took to her bed, where she has since remained for the most part. During the latter part of the fast period vomiting and diarrhea were frequent and persistent symptoms. The fast was terminated of her own volition. Afterward she developed a mental condition of delirium.

Examination.—I saw her for the first time on February 16. She was then pale and emaciated. Her speech was peculiar, being slow and interrupted by short periods of silence. The voice, too, was peculiar, somewhat nasal in character. She replied slowly and after a distinct interval of silence to questions asked her. Some of her answers were clear and relevant, while others were irrelevant, being often foolish and absurd. Movements of the head from before backward and from side to side and again in a rotary fashion were noted. She had been affected with these movements for two weeks past. This symptom was made much worse by emotion. Pain sense was apparently normal. I suggested that the patient be removed to a hospital, and she, by immediate protest, showed that she quickly comprehended this remark.

Condition in Hospital.—When she was removed to the hospital a few days later, she begged to be taken home and cried a good deal during the first two days of her stay. Her voice was stronger and louder and the delirious condition was less marked. She now developed two new features, viz.: loud screaming spells and a delirium characterized by obscenity and lewdness. These two features were so demoralizing to patients and to nurses that the hospital management requird her removal; and thus the patient accomplished her own end—to be sent home.

Subsequent History.—At home the screaming attacks continued for two or three days, as well as the obscene character of the delirium, at the end of which time they somewhat abruptly ceased after her husband told her that she did not act like a lady.

At my visit on March 3 the patient held up her hand to show me her middle finger, in which there was a rapid vibratory movement, and asked me if it did not dance like a "red devil." In the midst of much apparent delirium she stated her street number and several other points of accurate detail correctly and she made several very pointed and sarcastic criticisms of myself and my personal appearance.

March 9: Patient complains of much pain in the body generally, and especially in the left knee, which is somewhat swollen. She continues to eat well. Her husband thinks that she has greatly improved as to her mind. She complains much of pains in various parts of her body when these parts are pressed on.

April 2: The pain in the joint and pains on pressure have largely disappeared. The oscillatory movements are not present. She cries on the smallest provocation. The voice has changed in character, being now a semi-whisper. Her husband reports that she gets "stubborn spells" lasting one or two hours each, during which she refuses food, medicine, etc. She takes a "notion" to sit up and will do so; but if requested to do so she will invariably refuse. She cries very easily. There is no return of the "screaming spells" or of the lewd delirium. She sleeps a great deal in the daytime and very little at night.

The diagnosis of hysterical delirium here is made on consideration of the peculiar character of the delirium itself, which could scarcely be described accurately, the head and finger movements, the screaming and "stubborn" spells and by a consideration of her illness in its entirety, method of onset, etc. The sensory stigmata of hysteria could not be elicited.

The onset of the illness with acute articular rheumatism, the fast period of 56 days and then the hysterical delirium, leads one to inquire as to whether the fasting period in itself was a hysterical manifestation. I can not answer this question with confidence, although I am inclined to believe the answer should be in the affirmative. At least I feel confident that the fasting period was a manifestation of a neuropathic temperament, probably rendered more than ordinarily susceptible by the lowered vitality and toxemia, which the rheumatic attack doubtless produced. Finally, it is significant that the fasting period was set in operation through a suggestion, the reading of a medical treatise intended to exploit a fad—fasting.

Later History of Case 4.—Since the above was written the patient has improved somewhat. She had a noisy spell lasting several hours, during which she was extremely abusive and profane. On one occasion she defecated in the bed and explained afterwards that this was intended as a punishment for her nurses, who, she considered, had not treated her prop-

5. I learned that she continued to do well at last report, early in June, 1904.

erly. She is still much emaciated, although eating well, and complains of much pain in her hands and numbness in her legs. I incline to believe that she suffers from a certain degree of neuritis in these members.

Feb. 13, 1904.—Patient has slowly, but steadily improved, mentally and physically. She walks with assistance. Legs are very incoördinate in their movement. Lying on the bed she moves them readily. She thus presents the symptom-complex of astasia abasia. When things go wrong she occasionally has a convulsive attack.

Further observation only strengthens my view that this is a severe case of major hysteria.

Westinghouse Building.

DISCUSSION.

DR. HOWELL T. PERSHING, Denver, Colo., mentioned the case of a young girl in the high school who had a number of attacks of illness which were regarded by the attending physician as purely hysterical. During the early spring, while at her school work, she was noticed to be unduly anxious about it. She then became delirious and would talk nonsense, especially about animals. She was kept at home under the care of a very sensible mother. A neurologist, Dr. Hopkins of Denver, who saw her early, regarded it as clearly a case of hysteria. After going on for some weeks the case came under Dr. Pershing's care, at which time it was very difficult to engage her attention or to get a rational answer to any question. She would keep muttering to herself, looking about, and perhaps starting up out of bed. She complained that she was not treated right and that someone was trying to poison her. She would talk disconnectedly about animals, bears, raccoons, panthers, snakes and so on, which her mother attributed to her having read Seton Thompson's animal stories. Dr. Pershing could not trace it directly to these stories, but he regarded it as purely hysterical, and thought it would be a good plan to employ the urinary test of Gilles and Cathelineau, so he had a chemist make a quantitative analysis. There was a decrease in the urea and in the total solids, but a decided increase in the proportion of the earthy to the alkaline phosphates. In other words, the urine was precisely in the condition which Gilles claims to be characteristic of hysteria. He gave a very confident prognosis regarding the final outcome of the case. She did not eat or sleep well and her condition, while not alarming at all, continued for ten or twelve weeks. One morning she got up much better, and from then on she made a very rapid and uninterrupted convalescence; in the course of a few days she ate heartily and gained very rapidly in weight. In the course of a month and a half she gained 20 pounds. She then looked very well and said that she remembered very little after she left school until she found herself getting well.

DR. THEODORE DILLER, Pittsburg, Pa., declared that one of the points mentioned by Dr. Dercum is a very good one: viz., that there is a difference between a general insensitiveness or stupidity, and that due to true anesthesia. One of the main points on which he made the diagnosis in the first case was the convulsive seizures and the delirium and mutism between the convulsive seizures and the cessation of the convulsions. In this case, the patient had never had any such thing as a convulsive attack of any sort before the initial convulsions which ushered in her mutism and the convulsions were of a certain type which in themselves were strongly suggestive of hysteria. In another of the cases reported, a highly typical convulsive seizure (the first in the patient's life), ushered in the delirium. If one is going to stick to text-books, and to classify as cases of hysteria only those which are so usually described these cases could not be admitted; for the delirium is different in duration certainly from that described as part of an attack, although not much in character. Such a position would not allow any addition nor modification of any existing descriptions or classifications of disease.

Life alone begets life, and materialism has no foundation in nature or in reason.—Lord Kelvin.

THE RELATION OF STATES OF APPREHENSION TO CARDIAC DISEASE.*

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Some time ago an author was quoted in my hearing to the effect that in all cases of alienation which showed apprehension there could be found some cardiac lesion. Unfortunately, I have been unable to trace this statement tc the original, but it suggested an inquiry into the milder states of apprehension as distinguished from the anxiety neuroses. This inquiry I am at present following out and the few conclusions which are justifiable at the present time will be given here, while any results which may be derived from further research will be published later.

Twenty-five of the most recent admissions to the women's side of the Sheppard and Enoch Pratt Hospital, who are at present under care, have been taken as a series for this inquiry. Five of these twenty-five cases have shown apprehension in a sufficiently marked degree to leave no doubt as to its being present, and no other cases have exhibited it, even though persecutory ideas were found. Three of these five cases showed some abnormality in the heart's action, viz., mitral insufficiency, a reduplicated second sound with murmurish quality of the first and an indistinct first sound. All the cases were depressed, but one patient since recovering from her depression has shown fixed ideas. Of the remaining twenty cases five showed heart lesions but showed no apprehension whatever. The mental condition of these patients was, melancholia, three cases; dementia præcox and acute mania, each one. The remaining fifteen cases showed varying mental conditions, but principally depression. In none of the heart cases was there any failure of compensation.

I have also made a further inquiry on twenty cases at the Johns Hopkins Hospital. The cardiac lesions were varied, the majority being valvular disease, usually with some complication, such as failing compensation, nephritis or arteriosclerosis, but there was one case of angina, one case of acute endocarditis following rheumatism, which showed a soft, systolic murmur, a case of arteriosclerosis with hypertrophy, and a case of aneurism of the aorta. Eleven of these cases admitted that they had fears in either a definite or an indefinite form, the former usually being a fear of death or fear of falling. In three cases the fear was associated with attacks of dyspnea and in one of these the frequent recurrence of these attacks has been succeeded by a loss of the associated feeling of apprehension. Six of the cases occurred in colored men, and all admitted fear except one, a boy with acute endocarditis. In all of these the fear was more apt to be present at night. Both Dr. McCrae and Dr. Emerson told me that they had noticed that colored patients with heart disease were more apt to become apprehensive at dusk, sometimes becoming quite excited. It has been frequently observed by others, I believe, that the apprehension associated with cardiac lesions is more apt to become exaggerated at night, and especially in the colored race.

Head, in his article on "The Mental Changes that Accompany Visceral Disease,"[1] dwells at some length

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

1. Brain, Part xcv, 1901.

on the difficulty of getting patients in general hospitals to admit that they have mental symptoms, and I am of the opinion that had I been better known to the patients in the Johns Hopkins Hospital whom I questioned as to having fear that I might have found a few more who would admit its presence. At the same time I believe that the majority of those who denied having apprehension were truthful, I was very careful about my questioning, leading up to the subject gradually and putting the question as to having fear in a number of forms so that there could be no doubt of the patient understanding what was meant.

In his text-book, Dr. Osler does not mention apprehension as associated with cardiac lesions, but in a personal letter states that it is "a pretty common symptom in heart disease, being especially common in the neurasthenic forms." It seems to me that this shows the general feeling of the clinician toward these associated conditions, that although it is often present it is a nervous phenomenon which can probably be explained by the personal individuality or peculiarity of the patient. This seems to be the opinion of others, as Gibson[2] narrates the case of a man who for years had suffered from tachycardia and had associated with this agoraphobia. Gibson considers the persistent tachycardia due to personal peculiarity, and states that in such cases there is usually some associated mental symptoms. In the same lecture he speaks of the mental distress associated with tremor cordis, caused by the sensation "as if the heart stopped and might not recommence its action again." There is a great deal of anxiety attendant on this condition and the patient shows apprehension in his facial expression. A feeble, fluttering action of the heart may be demonstrated both by palpation and by auscultation. It must be remembered that this condition is quite different from palpitation, both in its physical manifestation and its cause, for tremor cordis is probably produced by nervous disturbance but never by psychical excitement, while palpitation is frequently brought on by some emotional disturbance. In palpitation there seems to be no doubt that there is a loss of vagus control. We all know that with palpitation there is often present a feeling of anxiety and associated there may be ringing in the ears, flashes of light, deep, sighing respirations, and sometimes giddiness. The force, as well as the rate, is increased.

Stransky,[3] after a study of the anxiety neuroses and their pathogenesis, is of the opinion that there must be a predisposed brain and a pathologic sensation acting in the region of the vagus in order to have apprehension associated with cardiac disease. This seems to me to sum up our present knowledge of these associated conditions, but I feel that it is not exact enough to be satisfying. The symptoms as observed in the colored race would seem to me to point to personal peculiarity, while the almost constant presence of apprehension in the neurasthenic heart cases seems to me to indicate a pathologic condition of the vagus control.

I hope to follow up this investigation more carefully. Many points have suggested themselves about which I am not able to speak at present. There seems to be little doubt that the physical symptoms present in our cases during the attacks of apprehension are similar to those which have been carefully studied in the anxiety neuroses, but more investigation is needed in these mild cases of apprehension.

The conclusions which I wish to make are:

1. The cardiac lesion is not the primary factor in causation of the associated state of apprehension.

2. For want of a better term, what we call the idiosyncrasy of the patient is largely responsible for apprehension associated with cardiac lesions.

3. In neurasthenic types a want of vagus control is an important etiologic factor.

4. Our knowledge of this subject is not yet exact enough. On this last point let me urge you to urge on your friends who are engaged more actively in clinical medicine investigation of this condition of apprehension in their heart cases.

2. The Nervous Affections of the Heart, second series, Edin. Med. Jour., vol. xiii, p. 334.

3. Monatsschrift fur Psychiatrie und Neurologie, vol. xiv, No. 2, August, 1903.

SPASTIC DIPLEGIA FOLLOWING PERTUSSIS.*

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History.—The patient, a girl of 30 months, was brought to the clinic for nervous diseases at the St. Agnes Hospital in February, 1903. The mother stated that 8 months previously (May, 1902) the child had contracted pertussis, which lasted for 3 months. At the end of the first month of the disease the patient began gradually to lose the power of walking. Her mother first noticed that she became awkward, stumbled easily, and was very uncertain on her feet. By degrees the inability to walk increased until at the end of 4 months she could not walk unassisted. About this time the mother noticed that the child had nystagmus, but she had noted no other symptom until she brought her to the clinic 4 months later.

Family History.—The family history of the child was excellent. The parents were healthy young people, and there was no history of nervous disease in their families. This was the only child and the mother had never had any miscarriages. The child was delivered normally, the head presenting, after a pregnancy of nine months and one week. No instruments were employed, and there was no injury to the head. The child was reared on the breast and passed through her early infancy up to the age of 21 months without any of the usual digestive disturbances and without contracting any other disease than the one mentioned above. She developed in all ways normally, except that she did not walk until the nineteenth month.

Examination and Course of the Disease.—I saw the patient first in February, 1903, which was 8 months after the onset of her nervous disease. At this time she was fairly well preserved, intelligent, understood everything that was said to her, and could talk plainly. Her head was well formed; her palatal arch not unduly high, and there was an absence of the other physical defects which characterize the mentally deficient. In fact, there seemed to be every indication that the child was normal at birth, and had developed properly until the appearance of the weakness in her legs. The fontanelles had been closed since the end of the first year; the heads of the long bones were slightly enlarged, and some, though not marked, beading of the ribs was observed. When placed on the feet she sought at once for support, and would have fallen without it. Any attempt to walk unassisted was futile and developed a transient rigidity of both legs. When supported on each side by a person, her efforts to walk showed a tendency to cross-leg progression. The legs were slightly spastic at this time, though not always so. Often the test failed to show any stiffness whatever. Again, at the same examination, spasticity was present during a crying spell or on making voluntary effort. There was a tendency to hyperflexion of the feet, and both big toes were hyperextended. At this time the arms were

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

very little involved. When the patient picked up small objects there was some slight awkwardness of movement only. A constant small, irregular tremor was observed in the hand, and this was not increased by voluntary effort. The mother stated that the child twitched the shoulders and hands a good deal during sleep. There was a constant marked lateral nystagmus, and the pupils were equal and quite widely dilated. The knee jerks were increased and equal. The arm jerks were only slightly increased. Babinski's sign could not be developed, nor was there any clonus, and no sensory disturbance could be elicited. While the child was fretful and cried a good deal, there was no disturbance of any of the functions that could be noted. The appetite was good; the bowels regular; the heart was rapid and the first sound rough, but there was no murmur. The lungs were normal. No spinal deformity or tenderness could be observed. An examination of the eyegrounds by Dr. Shute gave negative findings.

From this time on the child was frequently observed and studied. The power to walk gradually failed, the spasticity increased, and in the arms there slowly developed a spastic condition, while at the same time there was a distinct and progressive loss of power. On March 25, 1903, the patient had, for the first time, a convulsive attack, which was general, preceded by a scream, and lasted only a few seconds. She was unconscious during the attack, though she did not bite her tongue nor lose control over the sphincters. Her condition was not materially changed immediately after the convulsion, but the spasticity and motor weakness increased more rapidly, the mind began to fail, her attention could not be fixed, any effort to grasp objects developed athetosis, and convulsive attacks became frequent. Some difficulty in swallowing was experienced shortly after the onset of the convulsions, and from this time until her death only liquids could be swallowed.

On September 27 an examination gave the following results: The child was greatly emaciated; the expression was anxious and vacant, and the attention could not be directed to the fingers moving before the eyes. The head was retracted and moved constantly from side to side; the eyeball rolled; the face was contorted as if in pain, and the pupils were contracted. The arms were held in a half-flexed position, the hands flexed at the wrist, the fingers hyperextended at the proximal joint and flexed at the other two joints, the thumb being held in the palm of the hand. The arms were twitching constantly, and at the same time moved slowly to and fro. The legs were spastic and crossed at the knees, while the big toe was hyperextended and the other toes flexed. The knee jerks were increased, but no clonus could be elicited.

The patient died on September 29, having had for a few days previous many convulsive attacks, general in character, but worse on the right side.

Autopsy.—At the autopsy only the brain and spinal cord were examined, and no gross lesions were discovered. The specimens were placed in formalin, and sections from various parts of the nervous system were stained by the Marchi and Weigert methods, and by hemalum and theonin.

Brain.—Throughout the cortex from the right and left frontal regions there were seen numerous small hemorrhages. These were especially clearly seen by the Weigert hematoxylin method. The pia was not abnormal.

In the right and left occipital regions the pia was thickened; there was an intense red-blood cell infiltration, and a moderate degree of round-cell infiltration. Numerous small hemorrhages were also observed throughout the cortex in these regions. The perivascular spaces were distended, and around the vessels there was an accumulation of mononuclear round cells. In one field a large vessel was seen, the walls of which were thickened and the lumen filled with blood.

In the paracentral regions the change was especially interesting and unique. The pia was slightly thickened; there was a moderate degree of round-cell infiltration; and the vessels were filled with blood cells.

In the cortex there were a few small hemorrhages, and there were also numerous areas where the perivascular spaces were distended. Around the blood vessels within these spaces was a large number of round mononuclear cells, partly filling the spaces, in some instances quite filling them (Fig. 1). In some fields the accumulation of cells amounted to three times the diameter of the vessel. One perivascular space seen was filled with fibrous tissue containing numerous nuclei. Surrounding these spaces the neuroglia was deeply stained and seemed to be amorphous. Two obliterated vessels were seen in another field.

Everywhere in the cortex, but especially around these distended perivascular spaces, were found large numbers of large round mononuclear cells, the protoplasm of which was granular. These cells were probably granular cells. The distinction between the nerve cells and these was closely brought out by the theonin stain. In sections stained by the Marchi method the cells in the perivascular spaces took the stain intensely; those in the tissue around the vessels were distinctly, though less intensely, stained. In one field a vessel was seen containing what appeared to be separated epithelial lining (Fig. 2). Cells of Betz were present, but they were not numerous and stained diffusely. By the Marchi method marked degeneration was observed in one of the peduncles, and this was most intense in the center of the foot. The anterior pyramids stained but faintly by the Weigert method. The fibers of the internal capsule were very poorly medullated, and did not take the stain at all.

In the optic thalamus there were seen two small vessels in a space surrounded by cells which contained spindle and round-celled nuclei. In the brain tissue, directly posterior to the chiasm, numerous small hemorrhages were observed. The right optic nerve did not take the Weigert stain very deeply; in fact, there appeared a partial degeneration. It, however, was difficult to decide whether it was degeneration or the result of the formalin in which it was hardened.

Spinal Cord.—In the spinal cord from the upper thoracic region, which was the highest level studied, to the lower lumbar levels, the crossed pyramidal tracts stained but faintly. In the upper thoracic region the pyramidal tracts also took the stain poorly. The Marchi method gave negative results in the medulla and lumbar region. The anterior cells did not appear to be abnormal, and the spinal roots were intact. The neuroglia was increased in the affected areas, and the axis cylinder had disappeared.

RESUME.

A child of 21 months developed, during an attack of pertussis, a spastic diplegia, with, finally, imbecility and general convulsions, and died at the end of 17 months. A study of the brain and spinal cord revealed the presence of numerous small microscopic hemorrhages, distension of the perivascular spaces with cellular accumulation around the vessels and the presence of large mononuclear cells surrounding these spaces and elsewhere in the cortex of the paracentral region. The pia was in places thickened and the seat of a cellular infiltration. The motor tracts were diseased from the internal capsule to the lumbar cord, staining either poorly or not at all by the Weigert stain. Acute degeneration was observed in the cortex and one of the peduncles, as shown by the Marchi method. The lesions were those of hemorrhagic encephalo-meningitis.

The change in the nervous system which I have just described is indicative of some inflammatory process. This change is not peculiar to whooping cough, however, and would indicate that some toxic process had been at work on the blood vessels and their surroundings. I have not been able to trace any degeneration of the fibers in the cortex, nor to discover any foci of sclerosis. The blood vessels in places showed distinct thickening, some were obliterated, and many others were surrounded by large mononuclear round cells. The perivascular spaces were very much distended and filled with these round cells, while the neuroglia immediately around these distended perivascular spaces was crowded with the same sort of cells as were seen in the perivascular spaces themselves. These spaces were in some places so very large that they were visible to the naked

eye. The degeneration in the anterior pyramids was probably due to the destruction of the motor fibers here and there in the cortex. In Jarke's[1] case there was, microscopically, evidence of inflammatory change. The tissues were crowded with leucocytes; there was perivascular cellular infiltration; and the vessel walls were thickened and infiltrated. In this case, however, there is no mention of any degeneration of the motor tracts. His case was one of hemiplegia, moreover, and, while the microscopic changes in some respects were similar to those which I have just described as occurring in my own case, clinically the cases differ very much.

Neurath,[2] in a recent communication in which he makes a preliminary report of the study of the post-mortem records in a number of cases of pertussis, mentions the fact that he has found the pia distended by numerous foci of cells in the cortex, distension of the pericellular and perivascular lymph spaces, hemorrhages, severe hyperemia, and round-cell accumulation. These were the only references to pathologic findings which resembled those found in my case.

Many different nervous manifestations are described in the literature as occurring during the course of pertussis, and if we classify these for the purpose of study we find that there are cases: 1, exhibiting psychoses; 2, showing disorders of the cranial nerves; 3, with convulsive disturbances; 4, with cerebral hemorrhages; 5, with other lesions of the brain and spinal cord, under which heading my case properly comes; 6, with involvement of the peripheral nerves; and, finally, 7, cases which suffer from neuroses.

PSYCHOSES.

Meschede[3] reported a case occurring in a child of 5¾ who, during an attack of whooping cough, developed hallucinations of sight, hearing and touch. Moebius[4] described a case of melancholia occurring during an attack of pertussis and quotes Emminghaus, who recognized the occurrence of psychoses during the course of this disease. Ferber,[5] Neurath,[2] Möller[6] and others have described similar cases. In my own case imbecility was a late symptom.

DISORDERS OF THE CRANIAL NERVES.

The special senses have been affected in a few cases reported. Meissner,[7] as early as 1844, recognized that blindness was a complication of pertussis. In Knapp's[8] case there was total blindness, due, he believed, to ischemia of the retina. Alexander[9] reported two cases, one in a child of 3 whose pupils were dilated and did not respond to light or in accommodation, and in whom there were bilateral neuritis and vomiting; the other, a child of 12, in whom, after headache, there was sudden loss of vision. The pupils were moderately large and reacted to light and in accommodation, but there was no abnormality of the media or eyegrounds. The former patient died without recovery of vision, and the second patient had improved at the time of reporting. Alexander believed that there was some intracranial process in these cases. There was no uremic condition in either.

In Duga's[10] case of sudden complete blindness the cause was a hemorrhage into the chambers of the eye. While there was no involvement of the nerves in this case it is deemed worthy of mention as a possible source of confusion in diagnosis.

Transient blindness may occur after scarlatina and typhoid fever, as well as pertussis. Jacoby[11] called attention to this fact, and claims that it is a uremic symptom. He states that it was first described by Ebert in 1868. In two cases cited by Sachs[12] there was transient blindness, but no uremic or nephritic symptoms. Steffen[13] reported the case of a girl of 8 who, during an attack of pertussis, saw indistinctly, and refers to a case of blindness reported by Sebregondi.[14]

In Silex's[15] case, a girl of 1¾, after convalescence from accidental poisoning by morphin, was found paralyzed on the left side, and to have divergent strabismus of the left eye. On the fourteenth day hemiopia was discovered, but the patient made a complete recovery 12 days later. Silex believed that the symptoms were due to hemorrhage into the posterior part of the internal capsule, while the hemiopia was probably the result of pressure on the optic tracts. Troitzky[16] described a case of psychic blindness (*seelenblindheit*).

Hockenjos[17] cites other cases of blindness occurring during pertussis, reported by Chotowitzky, Rau and Steffen. (I was unable to obtain the original references to these cases.)

In a few cases deafness has complicated pertussis. Falls[18] reported 4 cases of deafness occurring during the course of whooping cough, only 3 of which were of nervous origin. Similar cases have been reported by Wilde and Friquet (quoted by Hockenjos[17]). Gibb[19] reported the case of a boy of 4½ who bled from the ears during whooping cough, resulting finally in deaf-mutism. In 2,000 cases Gibb saw 4 in which bleeding from the ears took place, due to injury to the tympanic membrane. He quotes also the case of Clark.[20]

A case of paralysis of the posterior crico-arytenoid muscles was reported by Jurasz,[21] and in Craig's[22] case there was paralysis of the sixth and seventh pairs of nerves, due, he believed, to hemorrhage into the pons.

CONVULSIVE DISTURBANCES.

The most frequent complication of pertussis is convulsions, according to Hochenbach[23] and May.[24] These may take the form of mere twitchings in the region of the facial nerve, spasm of the glottis, or general convulsive seizures. In a small percentage of cases the convulsions are due to eclampsia. Lenhartz[25] found in 75 cases of pertussis 4 cases of eclampsia, of which 3 were fatal. Spasm of the glottis was present in 2 cases. In 29 cases collected by Rilliet and Barthez[26] convulsions occurred 5 times, and during the second stage.

CEREBRAL HEMORRHAGE.

The literature of the nervous complications of per-

1. Jarke: Archiv f. Kinderheilk., 1890, No. 20.
2. Neurath: Wiener klin. Woch., 1904, No. 46, p. 1267; ibid., 1896, No. 23, p. 488.
3. Meschede: Allg. Zeitschr. f. Psychiatrie, 30.
4. Moebius: Centralbl. f. Nervenheilk., 1887, pp. 641 and 129.
5. Ferber: Jahrbuch f. Kinderheilk., 1870, p. 229.
6. Möller: Archiv f. Psychiatrie u. Nervenkrank., 13.
7. Meissner: Gerhard's Handbuch, vol. ii, p. 568.
8. Knapp: Quoted by Alexander.
9. Alexander: Deut. med. Woch., 1888, No. 11.
10. Duga: Quoted by Hockenjos.
11. Jacoby: New York Med. Monatsschrift, February, 1891, p. 45.
12. Sachs: Sammlung's klin. Vortrag. v. innere Med., 1-29, 1890-1894, p. 445.
13. Steffen: Ziemssen's Handbuch, 1896, vol. iv, No. 1, p. 285.
14. Sebregondi: Quoted by Schreiber.
15. Silex: Berliner klin. Woch., 1888, p. 841.
16. Troitzky: Jahrbuch f. Kinderheilk., 1890, No. 31, p. 291.
17. Hockenjos: Jahrbuch f. Kinderheilk., 1900, No. 51, p. 4.
18. Falls: Zeit. f. Ohrenheilkunde, 1886, p. 303.
19. Gibb: Brit. Med. Jour., 1861, p. 434.
20. Clark: Quoted by Gibb.
21. Jurasz: Jahrbuch f. Kinderheilk., No. 14.
22. Craig: Brit. Med. Jour., 1896, p. 1440.
23. Hochenbach: Gerhard's Handbuch, vol. ii, p. 568.
24. May: Arch. f. Kinderheilk., 1900, p. 127.
25. Lenhartz: Ebstein's Handbuch, vol. i, p. 223.
26. Rilliet et Barthez: Traite des Malad. des Enfants, 1891, vol. v, No. 3, p. 712.

tussis is largely taken up with reports of this condition. There have not been, however, a great many cases reported with autopsy. This is partly due to the fact that the prognosis in these cases is good. In 38 cases collected by Schreiber[27] up to 1899 only 10 were verified by autopsy. His deductions, I believe, will not hold good at the present time. From a study of these 38 cases he concluded that in most instances the hemorrhage is into the meninges, but may occur in the substance of the brain, either as capillary hemorrhages or in the form of hemorrhagic encephalitis. Cerebral hemorrhage occurred most frequently in children from 2 to 4 years of age; the youngest being 10 months and the oldest 10 years. The hemorrhage occurred usually during a severe paroxysm. He attributes the occurrence of cerebral hemorrhage in pertussis to increase in the blood pressure and to venous engorgement. Many cases of a similar character have been described by Bernhart,[28] Sachs,[12] MacKerron,[29] Neurath[2] and Jarke.[1] Hochenbach[23] collected 23 cases in which a diagnosis of brain hemorrhage was made with 9 autopsies. In 5 cases the hemorrhage was into the white matter, in 2 into the cortex, and in 2 other cases between the dura and the pons.

Hockenjos[17] collected 41 cases of cerebral hemorrhage, and reported one case of his own. In only 11 of these was there an autopsy. Hemorrhage into the meninges was observed in 4 cases; into the cortex in one case; into the white substance in 5 cases; and undetermined in 1 case. He concludes that hemorrhage is most frequent under 6 years of age, and that the meninges is the site of preference for the hemorrhage.

Paul Valentine[30] collected from the literature 83 cases of nervous disturbances occurring during pertussis. Of these 16 were examples of monoplegia, 40 were hemiplegia, while only 5 or 6 cases were instances of paraplegia. He believes that the prognosis of paralysis in pertussis is very grave. Of 64 cases there were 14 who died, 22 who remained paralyzed, while the rest recovered almost completely.

Cases have been reported which came to autopsy without any—or only insignificant—pathologic change. For instance, Blache's[31] case only showed slight engorgement of the brain and spinal meninges. He refers specially to the case of West[32] and Wiesinger, in which the autopsy showed no pathologic change of the brain. Henoch[33] found some hyperemia of the brain in a child who had suffered from symptoms of meningitis. This was also true of a case of Jacobson's,[34] in which the child exhibited a left hemiplegia.

I have been able to collect in all only 20 cases in which an autopsy has been made. In Marshall's[35] case there was hemorrhage into the substance of the brain. The hemorrhage in Reimer's case was between the dura and the skull, as was also that of Cazin.[36] In the case of Barnier[37] (quoted by Barthez and Rilliet[26]) the hemorrhage was into the meninges. In Hauner's[37] case a large vessel in the brain was ruptured, and there was also hemorrhage into the arachnoid. Dauchez[38] reported a case of cerebral hemorrhage in a tubercular child. At the autopsy there was found a hemorrhagic area over the cortical surface of the left hemisphere, occupying the fissure of Rolando and the two frontal and parietal convolutions. In Stiebel's[39] case there was a large exudate in the arachnoid of the anterior lobes, and the gyri were filled with a grayish yellow substance. On section of the hemispheres hemorrhagic points were visible, and the ventricles were enlarged. External to the right ventricle there was extravasation of blood and some red softening around it.

Furbinger[40] describes a case in which there was capillary hemorrhage of the brain and cord, and also of the white substance. Strümpell[41] (quoted by Hockenjos[17]) reported a case in which there was capillary hemorrhage into the brain.

In Vidal's[42] case there were small hemorrhages of the white substance of the brain which were confluent in the occipital lobe.

Hockenjos[17] reported a case in which hemorrhage of the floor of the left ventricle and punctiform hemorrhage of the pons were observed.

Jarke[1] described a case of hemiplegia in which the autopsy revealed the presence of inflammatory foci thickening and infiltration of the vessel walls, the presence of two small foci of softening in the frontal and parietal convolutions, symmetrical in character, a perivascular infiltration, and a diapedesis of white blood corpuscles.

In Thomas's[43] case there was hemorrhage into the anterior portion of the medulla and overfilling of the vessels of the meninges.

In Blache's[31] case there was only slight engorgement of the meninges, brain and spinal cord.

West[32] reported a case of convulsions in which there was no change visible postmortem.

In Henoch's[33] case, which was clinically one of meningitis, there was found postmortem only hyperemia of the brain.

In Guibert's[44] case (cited by Schreiber[27]) there was no pathologic change observed. In a case reported by Cornelius May,[24] in which there were clonic convulsions, only edema and hyperemia of the brain were observed postmortem.

In Jacobson's[34] case of hemiplegia no pathologic change was found in the nervous system.

Simoninis[45] reported the case of a girl of 6 who exhibited bulbar symptoms, and the section showed hemorrhage into the brain.

Luce[46] cited a case in a boy of 5 who developed left hemiplegia. The autopsy showed the presence of hyperemia, and in the medulla some recent degeneration, as shown by the Marchi method. There was no perivascular hemorrhage, and no change in the blood vessel walls could be demonstrated.

Of these 21 cases—	Cases.
Hemorrhage occurred into the brain in	7
Hemorrhage occurred between dura and skull in	2
Hemorrhage occurred into the meninges in	1
Hemorrhage occurred into the substance of the brain and in meninges in	2
Capillary hemorrhage occurred in	2
Hyperemia occurred in	4
No pathologic change was found in	3

27. Schreiber: Archiv f. Kinderheilk., 1899, p. 1.
28. Bernhart: Deut. med. Woch., 1896, No. 20.
29. MacKerron: British Med. Jour., 1897, No. 21.
30. Valentine: Abstr. of Thesis in Lancet, 1902.
31. Blache: Schmidt's Jahrbuch, vol. i, p. 307.
32. West: British Med. Jour., 1889, No. 1, p. 157.
33. Henoch: Vorlesung. Kinderkrank., 1903.
34. Jacobson: Deut. Zeitschr. f. Nervenheilk., 1893, No. 4, p. 256.
35. Marshall: Virchow-Hirsch, vol. ii.
36. Biedert: Lehrbuch f. Kinderheilk.
37. Barnier: Quoted by Barthez and Rilliet.
38. Danchez: Prog. Méd., 1884, No. 12, p. 548.
39. Stiebel: Journal f. Kinderheilk., 1856, No. 26.
40. Furbinger: Quoted by Schreiber.
41. Strümpell: Quoted by Hockenjos.
42. Vidal: Prog. Méd., 1885, No. 2, p. 270.
43. Thomas: Schmidt's Jahrbuch, 1835, p. 139.
44. Guibert: Quoted by Schreiber.
45. Simoninis: Schmidt's Jahrbuch, v. 273, 1902, p. 51.
46. Luce: Deut. Zeitschr. f. Nervenheilk., 1898, p. 272.

These statistics do not agree with the statements made by Schreiber, who, in 10 autopsies, found that the hemorrhage occurred in most cases into the meninges. In Hagenbach's[23] statistics, based on 23 cases collected from the literature with 9 autopsies, he found in 5 of these 9 cases which came to autopsy that the hemorrhage was into the white substance, thus agreeing with the conclusions to which I have come in my statistics.

OTHER LESIONS OF THE BRAIN AND SPINAL CORD.

Pertussis is a known cause of encephalitis, though probably not a frequent one. Nothnagel[47] states briefly that encephalitis may occur after whooping cough, as well as after the infectious diseases, and believes that

Fig. 1.—Cortex, showing distended perivascular spaces, round cell accumulations and obliterated vessels.

cases like those of Henoch,[33] Fritzsche and Troitzky[16] belong to this class. Richardiere[48] (quoted by Marie) reported one case of "sclerosis encephalique."

Cases of spastic diplegia like that reported in this paper are rare in the literature; in fact, we can find but one—that reported by Sachs, which occurred in a child of 13 months who developed a gradual paralysis of both sides of the body, athetosis, increased reflexes, a high grade of imbecility, and defective speech. Unfortunately in this case there was no autopsy. Sachs,[12] who has studied the question of cerebral hemorrhage in children very carefully, states that whooping cough and pneumonia may frequently be causal factors. Out of 105 autopsies he found that in 23 cases of diplegia the lesions in 19 cases were atrophy, sclerosis and cysts, and in 4 cases there was present a porencephalon. In most cases of lobar sclerosis he states that the primary lesion completely disappears, and it is impossible to discover where the sclerosis took its origin.

Bernhardt[28] reported an interesting case in a child of 5 who, after a severe paroxysm of coughing, suddenly became stiff in the lower extremities, so that standing and walking were quite impossible. There was no loss of consciousness, no convulsions, and no involvement of the arms. The plantar reflexes were increased, and the feet were held in a position of plantar flexion. There was no foot clonus nor muscular atrophy. Some slight disturbance of sensation was observed, and at the onset there was some involvement of the bladder functions. All the symptoms finally disappeared and the patient recovered. The author expresses the opinion that the condition was due to hemorrhage into the spinal cord.

A case of Michell's[49] deserves a passing mention here. In his case there was a transient monoplegia of the left arm. The patient recovered entirely in 8 days.

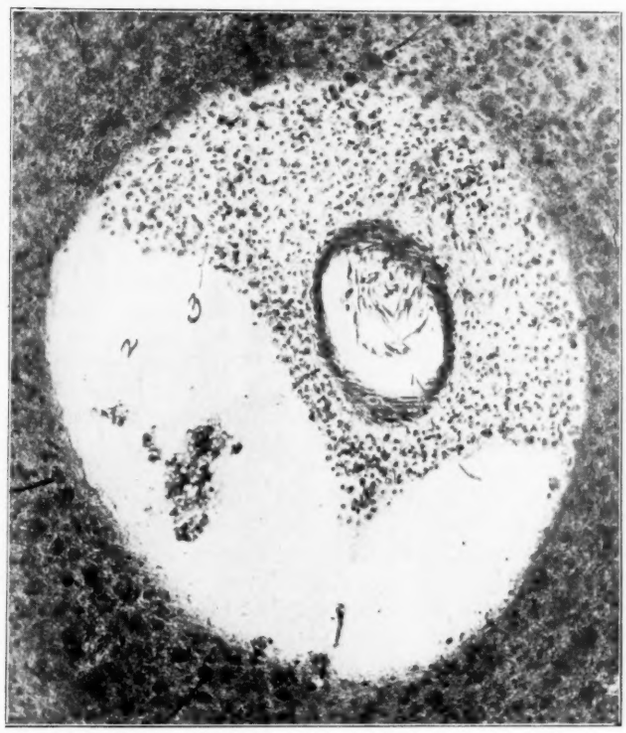

Fig. 2.—1. Lumen of a vessel. 2. Perivascular space, greatly distended. 3. Round cells. Around the spaces are seen numerous granular cells. (Marchi method.)

Luisade[50] described a case of paraplegia in a girl of 5 who finally recovered. In Hagedorn's[51] case there was first paraplegia, ptosis and spasm of the facial muscles, finally all the limbs were paralyzed and the patient died. There was no autopsy. Mackey[52] cites a case of Landry's paralysis with recovery. Hydrocephalus has followed pertussis in one case reported by Lombard[53] (Hochenbach).

PERIPHERAL NERVES.

We can find only one case that belongs under this heading, that reported by Moebius,[4] of a child of 3 who developed, first, paralysis of the legs, then of the arms

47. Nothnagel: Specielle Path. et Therap., vol. ix, 1901.
48. Richardiere: Quoted by Marie.
49. Michell: Thèse de Paris, 1891.
50. Luisade: Schmidt's Jahrbuch, 1899, No. 261, p. 232.
51. Hagedorn: Schmidt's Jahrbuch, 1903, No. 273, p. 51.
52. Mackey: Brit. Med. Jour., Aug. 26, 1884.
53. Lombard: Quoted by Hochenbach.

and neck muscles, and finally of the diaphragm. He believed that the case was a toxic action analogous to that which produces paralysis in diphtheria and scarlet fever. The child recovered completely. This is the only case reported that pointed to involvement of the peripheral nerves.

NEUROSES.

Epilepsy has followed pertussis, and Theodor[54] and Steffen[13] state that chorea may also be a complication. Steffen believes that in the latter case it is probably the result of some focal brain lesion.

Several theories have been advanced to explain the occurrence of paralysis. Kassirer,[55] Marie[56] and Moebius[4] have claimed that the paralysis is due to infection. Moebius believed that it is the result of a toxin analogous to that of diphtheria. Neurath,[2] and particularly the French authors also, defend the toxic theory. Furbinger[40] believes that the blood vessel walls become altered by the toxin and are thus more susceptible to the increase in blood pressure.

Biedert[36] and Hagenbach look on whooping cough not as a general infection like scarlet fever and measles, but believe that it is a local infection of the bronchi in which the cramp-like attacks of coughing may be attributed to the irritation of the superior laryngeal nerve.

In a case reported by Henoch,[33] in which there were convulsions and strabismus, but in which the autopsy revealed only hyperemia of the brain and meninges as well as hemorrhages, he believed the hemorrhages were due to carbon dioxid intoxication.

Luce[57] believed that in acute attacks of hemiplegia occurring during the course of pertussis, either a meningeal hemorrhage is found or there is no anatomic basis for it. He claimed that it was not proven that an isolated hemorrhage into the internal capsule or elsewhere in the pyramidal tracts could occur as the result of increased blood pressure. He looks on the occurrence of hemiplegia in these cases as due to CO_2 intoxication.

I believe that in my case the widespread lesion in the cortex was the result of a toxin acting on the vessels and setting up an inflammatory process. This process resulted in the destruction of fibers here and there in the cortex, especially in the paracentral region, in consequence of which there followed a degeneration of the pyramidal tracts. The small hemorrhages in the cortex were probably due to the convulsive attacks which preceded death.

To Dr. W. G. Spiller is due my sincere appreciation for his assistance in the study of the sections.

DISCUSSION.

DR. T. H. WEISENBURG, Philadelphia, reported the case of a canary bird which was the inmate of a house where three children were sick with whooping cough. The bird had been sick for about five weeks; previously he had been perfectly well. He had spells of coughing and these were more frequent at night and would keep him from sleeping. He had attacks of panting, associated with coughing and choking. He died of diarrhea after glycerin had been placed in his drinking water. The brain was removed and sections stained by the hemalum-eosin stain showed the blood vessels to be very much congested; these stood out prominently and diapedesis of the red blood cells could be easily seen. This is an interesting finding in conjunction with Dr. Rhein's case where hemorrhages were marked.

54. Theodore: Arch. f. Kinderheilk., 1890, p. 219.
55. Kassirer: Centralbl. f. Kinderheilk., 1896, p. 37.
56. Marie: Progrès Méd., 1885, p. 167.
57. Luce: Deutsch. Zeitschr. f. Nervenheilk., 1898, p. 272.

DR. R. C. MOORE, Omaha, Neb., stated that in severe nervous troubles, following an acute disease, the question arises whether the nervous disorder is due to anything mechanically connected with the disease or whether it is due to the toxins. Of course, the sequelæ of scarlet fever are of toxemic origin, but in this case the cerebral hemorrhage may possibly have been caused by the mechanical action due to the severity of the cough. In Dr. Moore's practice several years ago a little child about a year and a half old, during a severe attack of whooping cough, became totally blind. An ophthalmoscopic examination showed no disease of the eyeball, retina or anything connected with them. Therefore, the lesion must have been central. There was no spasm and the child developed no other severe symptoms. The lungs were normal and the child finally recovered. The probability is that in this child's brain there was a condition of those minute hemorrhages as described by Dr. Rhein, but the condition was not sufficiently severe to cause a fatal termination; the natural recuperative powers removed the results of the disease. Dr. Moore considered at that time that the child's condition was probably due to the severity of the cough, and that the products of the microorganism of the disease had nothing whatever to do with it. Very likely in Dr. Rhein's case the slight hemorrhages were due to the same cause.

DR. JOHN H. W. RHEIN said that it would be interesting, if possible, to study the effect of whooping cough on the nervous system of the lower animals. After a brief review of the literature he has been unable to discover any data on this subject.

ACUTE INTESTINAL SURGERY, WITH REMARKS ON TECHNIC.*

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There is a class of abdominal cases which may justly be considered acute. Acute for the reason that the indications for immediate surgery are mandatory and in which the mortality largely depends on the time of operation and the technic of the work. Under this heading I wish to discuss:

1. Penetrating gunshot and stab wounds of the abdomen.
2. Severe abdominal contusions associated with rupture of the intestines or with other visceral injuries.
3. Strangulated hernia.

I shall confine myself as closely as possible to a consideration of the operative technic.

PENETRATING GUNSHOT AND STAB WOUNDS OF THE ABDOMEN.

At the last meeting of this Association I presented in detail a series of cases of gunshot and stab wounds of the abdomen on which I had operated at the St. Louis City Hospital. In that paper I endeavored to show the impossibility of determining the damage done to abdominal viscera by a bullet or knife wound penetrating in character by any known method save exploratory section. As my experience grows I am convinced that the conclusions arrived at in that paper were correct. Assuming that we accept the statement that all penetrating wounds should be explored, as is agreed by the majority of surgeons who have had any actual operative experience in this work, the technic of the work is well worthy of consideration and should be fully discussed.

The operation itself may be divided into: (a) Examination of wounds; (b) incision; (c) control of hemorrhage; (d) search for visceral injuries; (e)

* Read before the Mississippi Valley Medical Association, 1904, at Cincinnati, Ohio.

method of repairing injuries to viscera; (f) irrigation and drainage; (g) closure of wound.

It goes without saying that the patient should be carefully prepared before any attempt is made to investigate the extent of his injuries.

(a) The wound of entrance, and that of exit (if one exists), should be noted. The skin at wound of entrance is incised sufficiently to admit the finger; the wound is then traced and if it is found to penetrate the abdominal wall perforation should always be assumed and exploratory section proceeded with.

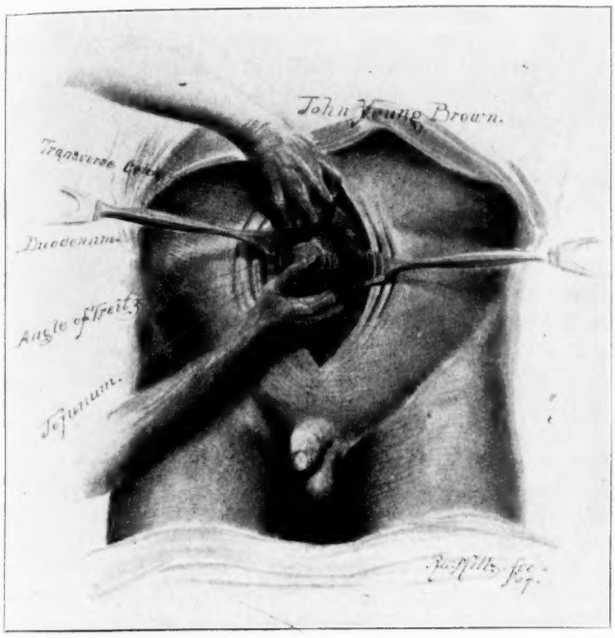

Fig. 1.—Transverse colon thrown back and hand picking up jejunum.

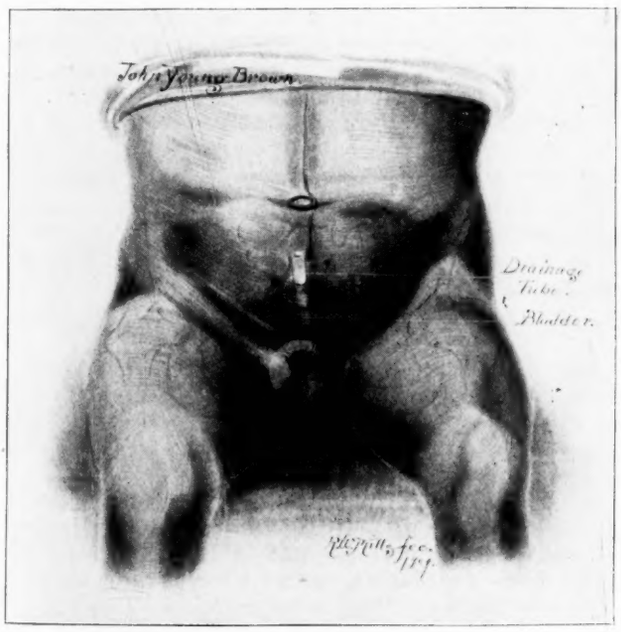

Fig. 2.—Glass drain in cul de-sac of Douglas. Patient in exaggerated Fowler position.

(b) As it is necessary in all penetrating gunshot wounds to examine systematically the peritoneal viscera, a median incision is best. This should begin an inch and a half below the ensiform cartilage and extend to two inches below the umbilicus. An incision of this kind gives complete command of the field.

(c) As soon as the peritoneal cavity is opened all sources of hemorrhage should be sought and controlled by ligature. In wounds of the liver and spleen careful gauze tamponade is the best method of controlling hemorrhage, the gauze being brought out through a stab wound made in the region of injury, or through the wound of entrance if possible.

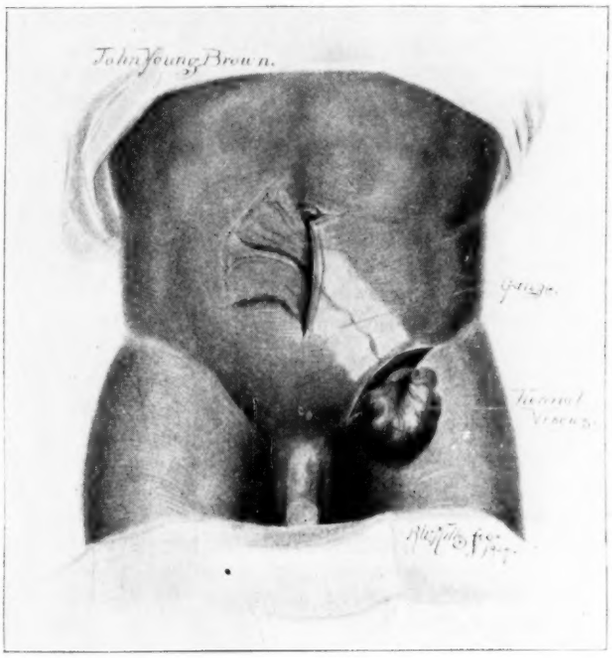

Fig. 3.—Gauze in place and gut ready to be delivered through the abdominal incision.

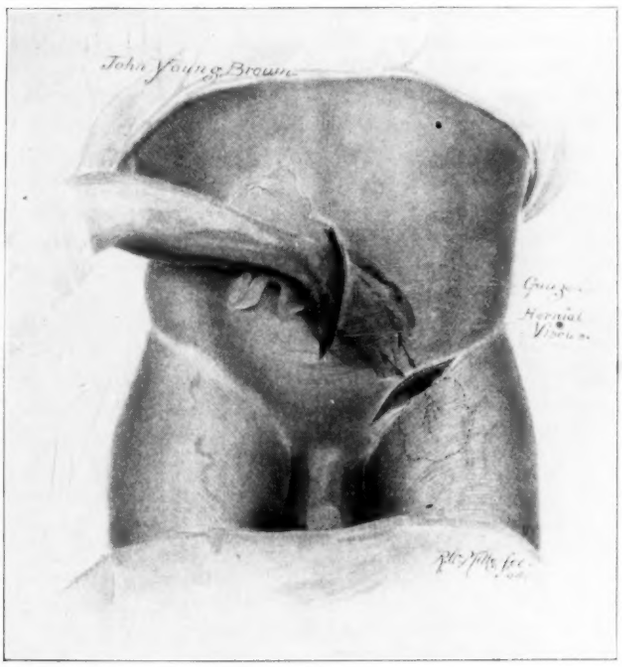

Fig. 4.—Method of delivery of bowel.

(d) In searching for bowel injuries there are two important anatomic landmarks to be observed: first, the angle of Tritz, and second, the ileocecal junction. In order not to eviscerate a patient it is necessary for

the surgeon to find at once the jejunum as it comes from under the colon. By throwing the transverse colon back, the jejunum can be picked up, just as is done in gastroenterostomy, and from this point it is followed to its juncture with the cecum, or the search can be reversed by beginning at the ileocecal valve and following the small bowel up (Fig. 1). As the operator goes over the small bowel, the assistant returns the gut, thus exposing only a small section at a time. The large bowel is next examined from the ileocecal juncture to the rectum. In wounds of the stomach, the posterior wall is readily reached by tearing through the omentum and pulling the stomach through the rent. The rent in the omentum is then closed with continuous suture of fine silk. Injuries to the bladder are easily recognized by the use of the catheter and the Trendelenburg posture. A search of this kind precludes the possibility of overlooking bowel injuries.

(e) Wounds of bowel not in too close proximity are repaired either by means of a silk purse-string suture or by a through-and-through silk stitch, and then completed with the Lembert stitch. The location of bowel wounds should be carefully noted. Wounds close to the mesenteric border are of extreme importance, and the same may be said of wounds of the mesentery. We must be assured that the blood supply of the bowel is not interfered with. Where there are multiple perforations in close proximity, or where the blood supply is cut off, resection is imperative. While I am not averse to the suture, I am convinced, from a large experience, that the Murphy button is the ideal method of making an anastomosis in repairing gunshot wounds. It is simple, quick and reliable. My assistant, Dr. Wm. J. Doyle, recently resected six feet of small bowel in a patient, with sixteen perforations of the bowel and six of the mesentery. This anastomosis was made with the button and was quickly accomplished. The patient passed the button on the nineteenth day and has been discharged from the hospital.

(f) Gunshot wounds are about the only class of cases in which I use irrigation. In such cases blood and extravasated bowel contents are invariably found in the peritoneal cavity, and their removal is greatly facilitated by copious irrigation. The apparatus used is the funnel, rubber hose and the irrigating tube of Joseph Price. In addition to the mechanical cleansing effects of the irrigation, the salt solution is rapidly absorbed by the peritoneum and the stimulation thus obtained is well marked in badly shocked patients.

Except in wounds of the liver, pancreas and spleen, gauze is never used, and in these cases it is used to control hemorrhage, and not as a drain. The drainage I have found most effective in these cases is the glass drain placed through a stab wound above the pubes, the tube being placed in the cul-de-sac of Douglas; the patient is then placed in the exaggerated Fowler position and the tube drained by suction (Fig. 2).

(g) The long incision, so necessary for thorough work in these cases, should be carefully closed. As many of these patients are badly shocked, the through-and-through method of closure is the best, because it can be done quickly. I believe, however, that when the condition of the patient will permit the wound should be closed in layers, after the method suggested by Ochsner, namely, catgut for peritoneum and fascia: tension sutures of silkworm gut through skin, muscle and fascia; with horse-hair sutures for the skin. The importance of care in closure has been impressed on me very forcibly in two cases operated on in the last year. One case was that of a policeman on whom I operated, resecting eighteen inches of ileum, in which there were seven perforations. Six days after operation I found his intestines out on the abdomen. I returned them, closing the wound in layers. The second case was that of a man on whom I operated for a gunshot wound of the liver. The hemorrhage, which was severe, was controlled by gauze tampon. Four days after operation his wound gave way, requiring a second closure. Both of these cases we closed through and through at primary operation, owing to the bad condition of the patient, and, while the recovery in each case was satisfactory, such accidents can be avoided by careful closure.

ABDOMINAL CONTUSIONS ASSOCIATED WITH RUPTURE OF BOWEL OR INJURY TO OTHER ABDOMINAL VISCERA.

Abdominal contusions associated with rupture of the intestine and with injury to other abdominal viscera are by no means of uncommon occurrence. Such injuries are among the most fatal the surgeon is called on to treat, for the reason that they are seldom recognized until widespread peritonitis is present. The frightful mortality in such cases was ably discussed in a paper by Curtis.[1] He reported 116 cases occurring prior to 1887. These cases were all treated without operation, and all terminated fatally. Homer Gage[2] collected 85 cases occurring since 1887. Forty-five were not submitted to operation and all died; 40 were operated on, with 17 recoveries. Bottomley[3] discusses abdominal contusion, accompanied and unaccompanied by intestinal injury. His views are based on a careful analysis of 20 cases of undoubted severe intestinal injuries, and he concludes as follows:

"To sum up in a few words, it may be said that at present we have no certain means of distinguishing between a simple abdominal contusion, and one complicated by severe intestinal injury, except through exploratory incision. This, to be of most avail, must be done within a very short time (from three to five hours) after the injury. Having no certain method of diagnosis, and the promptness of the operation being the feature necessary for its success, exploratory laparotomy, combining, as it does, opportunity for a certain diagnosis and the best possible treatment, if injury be present, should be a very early routine measure in all but the most trivial cases of contusion of the abdomen."

Two cases have come under my observation during the last year, from which I have learned a severe lesson.

CASE 1.—T. M., aged 23, German, was admitted to hospital at 9:30 a. m. Nov. 1, 1903.

History.—Four days prior to admission he was struck in the abdomen with a piece of timber. The blow was a severe one and he suffered, at the time of injury, greatly from shock, which in a measure subsided. Purgatives were freely given, but his bowels failed to move. The usual hot applications were made to the abdomen. When he arrived at the hospital his abdomen was tense, pulse very rapid, features pinched, vomiting continuous. A diagnosis of acute septic peritonitis, the result of probable intestinal rupture, was made.

Operation.—He was immediately prepared for operation, and the abdomen was opened through a median incision four inches long below umbilicus.

1. American Year-Book of Medicine and Surgery, 1903, p. 113.
2. Homer Gage: Ann. Surgery, March, 1902.
3. Bottomley: Boston Medical and Surgical Journal, Dec. 5, 1901.

On opening the peritoneum fecal matter gushed freely from the incision. The intestines and omentum were highly congested and covered with lymph. Owing to the patient's bad condition, irrigation with hot normal salt solution was begun at once to combat shock. Eighteen inches from the ileocecal valve two perforations of the small intestine were found. These were closed with through-and-through sutures of silk and buried with interrupted Lembert stitches. The peritoneal cavity was thoroughly flushed, a glass drain was placed in pelvis, and a rubber tube drain was placed through stab wounds made in either flank. A rubber drain was also placed in the upper angle of the wound, and the wound left open. One through-and-through silkworm-gut suture only was used to close the abdomen. The operation lasted fifteen minutes, patient taking only 28 c.c. of chloroform. The patient died four hours after operation.

CASE 2.—A Greek laborer, age 49, was admitted to hospital Sept. 15, 1904.

History.—An hour before admission he was run over by a wagon, the wheels passing over his abdomen.

Examination.—On admission he was suffering severely from shock; pulse bad, well-marked evidence of internal hemorrhage; no ribs fractured and no injury to pelvic bones. Catheterization showed no blood in urine. There was great tenderness and muscular rigidity over the entire abdomen; pronounced dullness in region of spleen. He was given hypodermoclysis, surrounded by hot bottles and carefully watched. He reacted nicely. Examination later revealed tumor in region of spleen. Five days after the receipt of injury, when all his symptoms pointed to recovery, he suddenly developed symptoms of alarming internal hemorrhage.

Operation.—He was immediately prepared for operation and the abdomen was opened. The peritoneal cavity was found to be filled with blood, the source of hemorrhage being a lacerated spleen. The wound in the spleen was tamponed with gauze and the abdomen flushed with hot saline. The patient died two hours after operation.

Thus is added two more cases to the long list, making up the 100 per cent. mortality the expectant treatment of these conditions has given to us. The first case died of peritoneal sepsis, and the second of hemorrhage. Early surgery would have saved both cases. If we wait for rapid pulse, vomiting and high temperature to develop before operating on such cases, surgery will prove of little avail. In all cases where there is pain, tenderness and muscular rigidity following abdominal contusion, the abdomen should be immediately opened and the proper surgery applied.

STRANGULATED HERNIA.

During the last year I have done primary resection for gangrenous bowel on five cases of strangulated hernia; three of these were inguinal and two were femoral hernia. Of these five, four recovered and one died. The method employed was as follows:

The sac was opened in the usual manner. Before attempting to relieve the constriction, the contents of the sac were carefully cleansed with saline solution and hydrogen peroxid. This was done to prevent leakage of septic material in the peritoneal cavity, after devulsion or division of constriction. A supplementary abdominal incision was made, the gut was then protected with gauze, pulled through the abdominal incision and resected well back into healthy tissue, the anastomosis being made in each case with the Murphy button.

The importance of draining the distended loop above the constriction of its highly septic contents can not be too strongly emphasized. This is best accomplished in the following manner:

As soon as the gut has been delivered through the supplementary incision, the bowel is clamped off and a glass tube, to which is attached a long rubber hose, is tied in the proximal bowel. The bowel is then allowed to drain through the tube into a receptacle under the table, while the resection is proceeded with. By this method no time is lost and the drainage is accomplished without soiling the field (Figs. 3 and 4).

I believe in all cases where there is any question about the integrity of bowel found in the sac of a strangulated hernia that the gut should be immediately resected. I also believe that the resection can be accomplished best by means of the above described method. Through a supplementary incision wide resection can be quickly made. The anastomosed gut can be returned without danger of damage to stitch or button union at the site of the anastomosis. If necessary, the pelvis can be drained through a stab wound above the pubes. A radical operation can then be done at the hernial site, as was done in all the cases above mentioned. I am well aware that strong theoretical objections can be offered to this procedure. I wish to report it, however, as a method which has proved satisfactory in my hands, claiming no priority for it, but hoping that the cases mentioned will bring out an expression of opinion as to the best method of dealing with a gangrenous gut found in the sac of a strangulated hernia.

VALEDICTORY ADDRESS AT JOHNS HOPKINS UNIVERSITY.*

WILLIAM OSLER, M.D.
BALTIMORE.

As this is the last public function at which I shall appear as a member of the university, I very gladly embrace the opportunity which it offers to express the mingled feelings of gratitude and sorrow which are naturally in my mind—gratitude to you all for 16 years of exceptionally happy life; sorrow that I am to belong to you no more. Neither stricken deeply in years nor damaged seriously by illness, you may well wonder at the motives that have induced me to give up a position of such influence and importance; to part from colleagues so congenial, from associates and students so devoted, and to leave a country in which I have so many warm friends and in which I have been appreciated at so much more than my real worth.

It is best that you should stay in the wonder-stage. Who can understand another man's motives? Does he always understand his own? This much I may say in explanation—not in palliation. After years of hard work, at the very time when a man's energies begin to flag, and when he feels the need of more leisure, the conditions and surroundings that have made him what he is and that have molded his character and abilities into something useful in the community; these very circumstances insure an ever-increasing demand upon them, and when the call of the East comes, which in one form or another is heard by all of us, and which grows louder as we grow older, the call may come like the summons to Elijah, and not alone the plowing of the day, but the work of a life, friends, relatives, even father and mother, are left to take up new work in a new field. Or, happier far yet, if the call comes, as it did to Puran Das in Kipling's story, not to new labors, but to a life "private, unactive, calm, contemplative."

THE LOSS OF INDIVIDUALS.

There are several problems of university life sug-

*Delivered at the annual commencement exercises, Feb. 22, 1905.

gested by my departure. It may be asked in the first place whether metabolism is sufficiently active in the professoriate body; is there change enough? May not the loss of a professor bring stimulating benefits to a university? We have not here lost very many—this is not a university, Mr. President, that men care to leave—but in looking over its history I do not see that the departure of anyone has proved a serious blow.

It is strange of how slight value is the unit in a great system. A man may have built up a department and have gained a certain following, local or general, nay, more, he may have had a special value for his mental and moral qualities, and his fission may leave a scar, even an aching scar, but it is not to be for long. Those of us accustomed to the process know that the organism as a whole feels it about as much as a big polyzoon when a colony breaks off, or a hive of bees after a swarm—'tis not indeed always a calamity; oftentimes it is a relief.

Of course, on a few the sense of personal loss falls heavily; the faculty of getting attached to those with whom we work is strongly developed in most of us, and some will realize the bitterness of the lines:

> Alas! that all we loved of him should be
> But for our grief as if it had not been.

HIS HEART ALL CICATRICES.

But to the professor himself these partings belong to the life he has chosen. Like the hero in one of Matthew Arnold's poems, he knows that his heart was not framed to be "long loved." Change is the very marrow of his existence—a new set of students every year, a new set of assistants, a new set of associates every few years to replace those called off to other fields! in any active department there is no constancy, no stability in the human surroundings. And in this there is an element of sadness. A man comes into one's life for a few years, and you become attached to him, interested in his work and in his welfare, and perhaps you grow to love him as a son, and then off he goes!—it must be as bad as having a daughter married, leaving you with a bruised heart. After teaching for 30 years and coming into very intimate contact with my assistants, my heart is all cicatrices, covered with one big "milky patch." (The medical students will appreciate the allusion.)

TOO LONG IN ONE PLACE.

The question may be asked whether as professors we do not stay too long in one place. It passes my persimmon to tell how some good men—even lovable and righteous men in other respects—have the hardihood to stay in the same position for 25 years. To a man of active mind too long attachment to one college is apt to breed self-satisfaction, to narrow his outlook, to foster a local spirit and to promote senility. Much of the phenomenal success of this institution has been due to the concentration of a group of light-horse intellectuals, without local ties, whose operations were not restricted and whose allegiance indeed was not always national, yet who were willing to serve faithfully in whatever field of action they were placed.

And this should be the attitude of a vigilant professoriate. As St. Paul preferred an evangelist without attachments, as more free for the work, so in the general interests of higher education a university president should cherish a proper nomadic spirit in the members of his faculties, even though it be on occasions a seeming detriment. A well-organized college trust could arrange a rotation of teachers which would be most stimulating all along the line. We are apt to grow stale and thin mentally if kept too long in the same pasture. Transferred to fresh fields, amid new surroundings and other colleagues, a man gets a fillip which may last for several years.

WOULD SWAP COLLEGE HEADS.

Interchange of teachers, national and international, will prove most helpful. How bracing the Turnbull lecturers have been, for example! It would be an excellent work for the University Association, which met here recently, to arrange this interchange of instructors. Even to swap college presidents now and then might be good for the exchequer. We have an excellent illustration of the value of the plan in the transfer this year of Professor Keutgen from Jena to give the lectures here on history. An international university clearing house might be organized to facilitate the work. How delightful it would be to have a return of the mediæval practice, when the professor roamed Europe at his sweet will, or to the halcyon era of the old Greek teachers, of which Empedocles sings:

> What days were those, Parmenides!
> When we were young, when we could number friends
> In all the Italian cities like ourselves,
> When with elated hearts we joined our train,
> Ye sun-born virgins on the road to truth.

YOUNG MEN, MOVE ABOUT.

It is more particularly on the younger men that I would urge the advantages of an early devotion to a peripatetic philosophy of life. Just so soon as you have your second teeth think of a change; get away from the nurse, cut the apron strings of your old teachers, seek new ties in a fresh environment, if possible, where you can have a certain measure of freedom and independence. Only do not wait for a fully equipped billet almost as good as that of your master. A small one, poorly appointed, with many students and few opportunities for research, may be just what is needed to bring out the genius—latent and perhaps unrecognized—that will enable you to do well in an unfavorable position what another could not do at all, not even in the most hopeful surroundings.

INFANTILISM AND PROGERIA.

There are two appalling diseases which only a feline restlessness of mind and body may head off in young men in the academic career. There is a remarkable bodily condition, known as infantilism, in which adolescence does not come at the appointed time, or is deferred until the twentieth year or later, and is then incomplete, so that the childish mind and the childish form and features remain. The mental counterpart is even more common among us. Intellectual infantilism is a well-recognized disease, and just as imperfect nutrition may cause failure of the marvelous changes which accompany puberty in the body, so the mind too long fed on the same diet in one place may be rendered rickety, or even infantile. Worse than this may happen.

A rare, but still more extraordinary bodily state is that of progeria, in which, as though touched with the wand of some malign fairy, the child does not remain infantile, but skips adolescence, maturity and manhood, and passes at once to senility, looking at 11 or 12 years like a miniature Tithonus, "marred and wasted," wrinkled and stunted, a little old man among his toys. It takes great care on the part of any one to live a mental life corresponding to the ages or phases

through which his body passes. How few minds reach puberty, how few come to adolescence, how fewer attain maturity! It is really tragic—this widespread prevalence of mental infantilism, due to careless habits of intellectual feeding.

Progeria is an awful malady in a college. Few faculties escape without an instance or two, and there are certain diets which cause it just as surely as there are waters in some of the Swiss valleys that will produce cretinism. I have known an entire faculty attacked. The progeric himself is a nice enough fellow to look at or to play with, but he is sterile, with the mental horizon narrowed, and quite incapable of assimilating the new thoughts of his day and generation.

As in the case of many other diseases, it is more readily prevented than cured, and, taken early, change of air and diet may do much to antagonize a tendency, inherited or acquired. Early stages may be relieved by a prolonged stay at the university baths of Berlin or Leipzic, or if at the proper time a young man is transferred from an American or Anglican to a Gallic or Teutonic diet. Through no fault of the man, but of the system, due to the unfortunate idea on the part of the denominations that in each one of the states they should have their own educational institutions, collegiate infantilism is far too prevalent, against which the freer air and better diet of the fully equipped universities is proving a rapid, as it is the rational antidote.

MENTAL ASTIGMATISM.

Nor would I limit this desire for change to the teachers. The student of the technical school should begin his *wanderjahre* early, not postponing them until he has taken his M.D. or Ph.D. A residence of four years in the one school is apt to breed prejudice and to promote mental astigmatism which the after years may never be able to correct. One great difficulty is the lack of harmony in the curricula of the schools, but this time will correct, and, once initiated and encouraged, the better students will take a year or even two years in schools other than those at which they intend to graduate.

FIXED TERM FOR TEACHERS.

I am going to be very bold and touch on another question of some delicacy, but of infinite importance in university life, one that has not been settled in this country. I refer to a fixed period for the teacher, either of time of service or of age. Except in some proprietary schools, I do not know of any institutions in which there is a time limit of, say 20 years' service, as in some of the London hospitals, or in which a man is engaged for a term of years. Usually the appointment is *aut vitam aut culpam*, as the old phrase reads. It is a very serious matter in our young universities to have all of the professors growing old at the same time. In some places only an epidemic, a time limit, or an age limit, can save the situation.

MEN UNDER FORTY GREAT WORKERS.

I have two fixed ideas well known to my friends, harmless obsessions with which I sometimes bore them, but which have a direct bearing on this important problem. The first is the comparative uselessness of men above 40 years of age. This may seem shocking, and yet read aright the world's history bears out the statement. Take the sum of human achievement in action, in science, in art, in literature—subtract the work of the men above 40, and, while we should miss great treasures, even priceless treasures, we would practically be where we are to-day. It is difficult to name a great and far-reaching conquest of the mind which has not been given to the world by a man on whose back the sun was still shining. The effective, moving, vitalizing work of the world is done between the ages of 25 and 40 years—these 15 golden years of plenty, the anabolic or constructive period, in which there is always a balance in the mental bank and the credit is still good.

In the science and art of medicine there has not been an advance of the first rank which has not been initiated by young or comparatively young men. Vesalius, Harvey, Hunter, Bichat, Laennec, Virchow, Lister, Koch—the green years were yet on their heads when their epoch-making studies were made. To modify an old saying, a man is sane morally at 30, rich mentally at 40, wise spiritually at 50—or never. The young men should be encouraged and afforded every possible chance to show what is in them. If there is one thing more than another upon which the professors of the university are to be congratulated, it is this very sympathy and fellowship with their junior associates, upon whom really in many departments, in mine certainly, has fallen the brunt of the work. And herein lies the chief value of the teacher who has passed his climacteric and is no longer a productive factor; he can play the man midwife, as Socrates did to Thesetetus, and determine whether the thoughts which the young men are bringing to the light are false idols or true and noble births.

CHLOROFORMING SEXAGENARII.

My second fixed idea is the uselessness of men above 60 years of age, and the incalculable benefit it would be in commercial, political and in professional life if, as a matter of course, men stopped work at this age. Donne tells us in his "Biathanatos" that by the laws of certain wise states sexagenarii were precipitated from a bridge, and in Rome men of that age were not admitted to the suffrage, and were called *depontani* because the way to the senate was *per pontem* and they from age were not permitted to come hither. In that charming novel, the "Fixed Period," Anthony Trollope discusses the practical advantages in modern life of a return to this ancient usage, and the plot hinges on the admirable scheme of a college into which at 60 men retired for a year of contemplation before a peaceful departure by chloroform. That incalculable benefits might follow such a scheme is apparent to any one who, like myself, is nearing the limit, and who has made a careful study of the calamities which may befall men during the seventh and eighth decades!

Still more when he contemplates the many evils which they perpetuate unconsciously and with impunity! As it can be maintained that all the great advances have come from men under 40, so the history of the world shows that a very large proportion of the evils may be traced to the sexagenarians—nearly all the great mistakes politically and socially, all of the worst poems, most of the bad pictures, a majority of the bad novels, and not a few of the bad sermons and speeches. It is not to be denied that occasionally there is a sexagenarian whose mind, as Cicero remarks, stands out of reach of the body's decay. Such a one has learned the secret of Hermippus, that ancient Roman, who, feeling that the silver cord was loosening, cut himself clear from all companions of his own age, and betook himself to the company of young men, mingling with their games and studies, and so lived to the age of 153, *puer-*

orum halitu refocillatus et educatus. And there is truth in the story, since it is only those who live with the young who maintain a fresh outlook on the new problems of the world.

THREE PERIODS IN THE TEACHER'S LIFE.

The teacher's life should have three periods—study until 25, investigation until 40, profession until 60, at which age I would have him retired on a double allowance. Whether Anthony Trollope's suggestion of a college and chloroform should be carried out or not, I have become a little dubious, as my own time is getting so short.

SOME HOPKINS HISTORY.

Such an occasion as the present affords an opportunity to say a few words on the work which Johns Hopkins has done and may do for medicine. The hospital was organized at a most favorable period, when the profession had at last awakened to its responsibilities, the leading universities had begun to take medical education seriously, and to the public at large had come a glimmering sense of the importance of the scientific investigation of disease and the advantages of well-trained doctors in a community. It would have been a very easy matter to have made colossal mistakes with these great foundations. There are instances in which larger bequests have been sterile from the start; but in the history of educational institutions it would be hard to name one more prolific than the Johns Hopkins University, and it has not been simply a seed farm, but a veritable nursery from which the whole country has been furnished with cuttings, grafts, slips, seedlings, etc.

It would be superfluous in this audience to refer to the great work which the trustees and Mr. Gilman did in 25 years—their praise is in all the colleges. But I must pay tribute to the wise men who planned the hospital, who refused to establish an institution on the old lines—a great city charity for the sick poor—but gave it vital organic connection with a university. I do not know who was directly responsible for the provision in Mr. Hopkins' will that the hospital should form part of the medical school, and that it should be an institution for the study as well as for the cure of disease.

Perhaps the founder himself may be credited with the idea, but I have always felt that Francis T. King was largely responsible, as he had strong and sensible convictions on the subject, and devoted the last years of his useful life in putting them into execution. As first president of the hospital board he naturally did much to shape the policy of the institution, and it is a pleasure to recall the zeal and sympathy with which he always was ready to co-operate.

It is said that in so few years all of the members of the original board have passed away, the last, Mr. Corner—faithful and interested to the end—only a few weeks ago. They did a great work for this city, and their names should be held in everlasting remembrance. Judge Dobbin and James Carey Thomas in particular, the members of the staff in the early days, remembered with gratitude for their untiring devotion to the medical-school side of the problems which confronted us. To John S. Billings, so long the skilled advisor of the board, we all turned for advice and counsel, and his influence was deeper and stronger than was always apparent. For the admirable plan of preliminary medical study, and for the shaping of the scientific work before the hospital was opened for patients, we are indebted to Newell Martin, Dr. Remsen and Dr. Welch. The present excellent plan of study leading up to medicine, in which the classics, science and literature are fully represented, is the outcome of their labors.

About this time sixteen years ago Mr. King, Dr. Billings, Dr. Welch and myself had many conferences with reference to the opening of the hospital. I had been appointed on January 1, but had not yet left Philadelphia. As so often happens, the last steps in a great organization are the most troublesome, and after some delay the whole matter was intrusted to Mr. Gilman, who became acting director; in a few months everything was ready, and in May the hospital was opened.

I look back with peculiar pleasure to my association with Mr. Gilman. It was both an education and a revelation. I had never before been brought into close contact with a man who loved difficulties just for the pleasure of making them disappear. But I am not going to speak of those happy days, lest it should forestall the story I have written of the inner history of the first period of the hospital. I promise you it is most interesting, full of nice details of which the newspapers know nothing. For example, the loves of the surgeons, the trials of the director, Dr. Hurd, the troubles of the nurses are there set down. I have arranged for its publication in time for the centennial of the hospital, in May, 1989, and from those of you who may then read it I bespeak a kindly consideration and criticism.

At the date of the organization of the hospital the two great problems before the profession of this country were, how to give to medical students a proper education; in other words, how to give them the culture, the science and the art commensurate with the dignity of a learned profession; and, secondly, how to make this great and rich country become a contributor to the science of medicine.

STRICT ENTRANCE REQUIREMENTS.

The conditions under which the medical school opened in 1893 were unique in the history of American medicine. It would have been an easy matter, following the lead of the better schools, to have an entrance examination which guaranteed that a man had an ordinary education, but Miss Garrett's splendid gift enabled us to say, "No; we do not want a large number of half-educated students; we prefer a select group, trained in the sciences preliminary to medicine, and in the languages which will be most useful for a modern physician." It was an experiment, and we did not expect more than 25 or 30 students each year for eight or ten years at least. As is so often the case, the country was better prepared to meet our conditions than we thought, and the number of admissions to the school has risen until we have about reached our capacity. Our example in demanding the preliminary arts and science course for admission to the school has been followed by Harvard, and is to be adopted at Columbia. It is not a necessary measure in all the schools, but there has been everywhere a very salutary increase in the stringency of the entrance examinations.

Before we took up the work, great reforms in the scientific teaching in medicine had already begun in this country. Everywhere laboratory work had replaced to some extent the lecture, and practical courses in physiology, pathology and pharmacology had been organized. We must not forget, however, that to Newell Martin, the

first professor of physiology in this university, is due the introduction in this country of practical classes in biology and in physiology. The rapid growth of the school necessitated the erection of a separate building for physiology, pharmacology and physiologic chemistry, and in these departments and in anatomy the equipment is as complete as is required. Of the needs in pathology, hygiene and experimental pathology this is not the occasion to speak. It is sufficient to say that in instruction in the sciences, on which the practice of the art is based, the school is in first-class condition.

The rapidity with which the scientific instruction in our medical schools has been brought to a high level is one of the most remarkable educational features of the past 20 years. Even in small, unendowed colleges admirable courses are given in bacteriology and pathology, and sometimes in the more difficult subject of practical physiology. But the demand and the necessity for these special courses has taxed to the utmost the resources of the private schools. The expense of the new method of teaching is so great that the entire class fees are absorbed by the laboratories. The consequence is that the old proprietary colleges are no longer a profitable venture, certainly not in the North, and fortunately the schools are being forced into closer affiliation with the universities, as it is not an easy matter to get proper endowments for private corporations.

HOW PHYSICIANS ARE MADE.

The great difficulty is in the third part of the education of the student, viz., his art. In the old days, when a lad was apprenticed to a general practitioner he had good opportunities to pick up the essentials of a rough and ready art, and the system produced many self-reliant, resourceful men. Then with the multiplication of the medical schools and increasing rivalry between them came the two-year course, which for half a century lay like a blight on the medical profession, retarding its progress, filling its ranks with half-educated men, and pandering directly to all sorts of quackery, humbuggery and fraud among the public. The awakening came about 30 years ago, and now there is scarcely a school in the country which has not a four-year course, and all are trying to get clear of the old shackles and to teach rational medicine in a rational way.

But there are extraordinary difficulties in teaching the medical student his art. It is not hard, for example, to teach him all about the disease pneumonia, how it prevails in the winter and spring, how fatal it always has been, how frightened of it New York and Chicago have become, all about the germ, all about the change which the disease causes in the lungs and in the heart—he may become learned, deeply learned, on the subject of pneumonia, but put him beside a case and he may not know which lung is involved, as he does not know how to find out, and, if he did find out, he might be in doubt whether to put an icebag or a poultice on the affected side, whether to bleed or to give opium, whether to give a dose of medicine every hour or none at all, and he may not have the faintest notion whether the signs look serious or favorable.

So also with other aspects of the art of the general practitioner. A student may know all about the bones of the wrist—in fact, he may carry a set in his pocket—and know every facet and knob and nodule on them, he may have dissected a score of arms, and yet when he is called to see Mrs. Jones, who has fallen on the ice and broken her wrist, he may not know a Colles' from a Pott's fracture, and as for setting it *secundum arten*, he may not have the faintest notion, never having seen a case.

Or he may be called to preside at one of those awful domestic tragedies—the sudden emergency, some terrible accident of birth or of childhood—that require skill, technical skill, courage, the courage of full knowledge, and if he has not been in the obstetrical wards, if he has not been trained practically, if he has not had the opportunities that are the rights of every medical student, he may fail at the critical moment, a life, two lives, may be lost, sacrificed to ignorance, often to helpless, involuntary ignorance.

HOPKINS' CHIEF HONOR.

By far the greatest work of the Johns Hopkins Hospital has been the demonstration to the profession of the United States and to the public of this country of how medical students should be instructed in their art. I place it first because it was the most-needed lesson; I place it first because it has done the most good as a stimulating example, and I place it first because never before in the history of this country have medical students lived and worked in a hospital as part of its machinery, as an essential part of the work of the wards.

In saying this, heaven forbid that I should obliquely disparage the good and faithful work of my colleagues elsewhere. But the amphitheater clinic, the ward and dispensary classes, are but bastard substitutes for a system which makes the medical student himself help in the work of the hospital as part of its human machinery. He does not see the pneumonia case in the amphitheater from the benches, but he follows it day by day, hour by hour, and he has his time so arranged that he can follow it; he sees and studies similar cases, and the disease itself becomes his chief teacher, and he learns its phases and variations as depicted in the living, and he knows under skilled direction when to act and when to refrain from action, he learns insensibly principles of practice, and he possibly escapes a nickel-in-the-slot attitude of mind, which has been the curse of the profession in the treatment of disease.

And the same with the other branches of the art; he gets a first-hand knowledge which, if he has any sense, may make him wise unto the salvation of his fellows. And all this has come about through the wise provision that the hospital was to be part of the medical school, and it has become for the senior students, as it should be, their college. Moreover, they are not in it on sufferance and admitted through side doors, but they are welcomed as important aids without which the work could not be done efficiently.

The whole question of the practical education of the medical student is one in which the public is vitally interested. Sane, intelligent physicians and surgeons with culture, science and art are worth much in a community, and they are worth paying for in rich endowments of our medical schools and hospitals. Personally, there is nothing in my life in which I take greater pride than in my connection with the organization of the medical clinic of the Johns Hopkins Hospital and with the introduction of the old-fashioned methods of practical instruction. I desire no other epitaph—no hurry about it. I may say—than the statement that I taught medical students in the wards, as I regard this as by far the most useful and important work I have been called on to do.

AMERICAN INVESTIGATORS.

The second great problem is a much more difficult one, surrounded as it is with obstacles inextricably connected with the growth and expansion of a compara-

tively new country. For years the United States had been the largest borrower in the scientific market of the world, and more particularly in the science relating to medicine. To get the best that the world offered, our young men had to go abroad; only here and there was a laboratory of physiology or pathology, and then equipped, as a rule, for teaching. The change in 20 years has been remarkable. There is scarcely to-day a department of scientific medicine which is not represented in our larger cities by men who are working as investigators, and American scientific medicine is taking its rightful place in the world's work.

Nothing shows this more plainly than the establishment within a few years of journals devoted to scientific subjects; and the active participation of this school as a leader is well illustrated by the important publications which have been started by its members. The hospital trustees early appreciated the value of these scientific publications, and the bulletin and the reports have done much to spread the reputation of the hospital as a medical center throughout the world.

But let us understand clearly that only a beginning has been made. For one worker in pathology—a man, I mean, who is devoting his life to the study of the causes of disease—there are 25 at least in Germany, and for one in this country there are a dozen laboratories of the first class in any one of the more important sciences cognate to medicine. It is not alone that the money is lacking; the men are not always at hand. When the right man is available he quickly puts American science into the forefront.

ANATOMIC WORK.

Let me give you an illustration: Anatomy is a fundamental branch in medicine. There is no school, even amid sylvan glades, without its dissecting-room, but it has been a great difficulty to get the highest anatomy represented in American universities. Plenty of men have always been available to teach the subject to medical students, but when it came to questions of morphology and embryology and the really scientific study of the innumerable problems connected with them, it was only here and there, and not in a thorough manner, that the subjects were approached. And the young men had to go abroad to see a completely equipped, modern-working anatomic institute.

There is to-day connected with this university a school of anatomy, of which any land might be proud, and the work of Dr. Mall demonstrates what can be done when the man fits his environment.

It is a hopeful sign to see special schools established for the study of disease, such as the Rockefeller Institute in New York, and the McCormick Institute in Chicago, and the Phipps Institute in Philadelphia. They will give a great impetus in the higher lines of work in which the country has heretofore been so weak. But it makes one green with envy to see how much our German brethren are able to do.

GERMANY'S GREAT WORK IN INSANITY.

Take, for example, the saddest chapter in the history of disease—insanity, probably the greatest curse of civilized life. Much has been done in the United States for the care of the insane, much in places for the study of the disease, and I may say that the good work which has been inaugurated in this line at the Sheppard Hospital is attracting attention everywhere. But what a bagatelle it seems in comparison with the modern development of the subject in Germany, with its great psychopathic clinics connected with each university, where early and doubtful cases are skillfully studied and skillfully treated. The new department for insanity connected with the University of Munich has cost nearly half a million dollars. One of the four new departments for which one side of the hospital grounds lies vacant, and which I trust will be built within the next 25 years, will be a model psychopathic clinic to which the acute and curable cases may be sent.

For how much to be thankful have those of us who have to share in the work initiated by these two great foundations! We have been blessed with two remarkable presidents, whose active sympathies have been a stimulus in every department, and whose good sense has minimized the loss of energy through friction between the various parts of the machine—a loss from which colleagues are very prone to suffer. A noteworthy feature is that in so motley a collection from all parts of the country the men should have fitted into each other's lives so smoothly and peacefully, so that the good-fellowship and harmony in the faculties has been delightful. We have been singularly blessed in our relationship with the citizens, who have not only learned to appreciate the enormous benefits which these great trusts confer on the city and the state, but they have come forward in a noble way to make possible a new era in the life of the university.

We of the medical faculty have to feel very grateful to the profession, through whose influence and support much of the success of the hospital and the medical school is due; not only the physicians of the city and of the state, who have dealt so truly with us, but the profession of the entire country, and more particularly to that of the southern states, whose confidence we have enjoyed in such a practical way. On a maintenance of this confidence the future rests. The character of the work of the past 16 years is the best guarantee of its permanence.

What has been accomplished is only an earnest of what shall be done in the future. On our heels a fresh perfection must tread, born of us, fated to excel us. We have but served and have but seen a beginning. Personally, I feel deeply grateful to have been permitted to join in this noble work and to have been united in it with men of high yet human ideals.

Special Article.

IMMUNITY.

CHAPTER VI.

THE ANTIBACTERIAL AND THE ANTITOXIC NATURE OF NATURAL IMMUNITY.

In a previous page it has been stated that natural immunity may be either antibacterial or antitoxic. We have seen that the protection afforded by the body surfaces may be effective against both microbes and their toxins, and that local inflammatory processes, although most certainly antagonizing the bacteria, may at the same time have some antitoxic value.

The term natural immunity, however, as indicated in the first section, has a peculiar application to the natural resistance of some species or races of animals to infections to which other species or races are susceptible; and to an unusual individual resistance often seen in members of a given race or species. This condition depends on properties residing in the tissues or fluids of the body, and consequently is independent of any protection which the body surfaces afford. Its presence is demonstrated in the most striking

manner by the experimental method, when microbes or toxins are injected directly into the tissues or circulation. At the same time every-day observation provides many examples.

In determining the antibacterial nature of immunity in a given case there are two conditions which must be proved:

Natural Antibacterial Immunity.

1, that the body cells or fluids are able to destroy the microbe, and that this power is sufficiently strong to make it reasonable that the immunity depends on it; 2, that the immunity does not depend on non-susceptibility to a possible toxin of the microbe, nor on a naturally existing antitoxin.

To prove the first condition, two procedures may be resorted to: First, the microbes are injected into the subcutaneous tissue, the peritoneal cavity or the blood vessels. If the animal does not become ill after a dose which, in proportion to weight, is pathogenic for some other test animal, an immunity is indicated. At a proper interval all the tissues and fluids are examined to determine the fate of the microbes. This may be done by staining the fluids and cells for bacteria and examining with the microscope, or by inoculating culture tubes with the fluids, the growth or non-growth of colonies determining whether or not the microbes have disappeared. Examinations of this nature often disclose the fact that many of the bacteria have been phagocytized by the leucocytes while others have apparently succumbed to the germicidal action of serum or plasma. In the event of their disappearance it should also be shown that the disappearance does not depend entirely on excretion through the urine or feces; this is best done by the culture method, but is a difficult technical problem.

Second, the animal's serum or plasma may be mixed with a suspension of the microbes in a number of test tubes, using varying amounts of serum with constant amounts of the bacteria in the different tubes, and at a subsequent period, from three to twenty-four hours later, cultures are made from these mixtures to determine the bactericidal power of the serum. The numbers of colonies which appear in these cultures, minus the number which appear when serum is not added, is an index of the bactericidal power of the serum. If this power is found to be high, it is, in the present state of our knowledge, considered as presumptive evidence that the natural immunity of the animal depends on it. It is, nevertheless, a fact that the antibacterial immunity of an animal does not always go hand in hand with the bactericidal power of its serum. A well-known illustration of this is the following: Both the dog and the rat have a rather high degree of immunity against infections with the anthrax bacillus; yet it has been found that the serum of the dog has almost no bactericidal effect on this microbe, while that of the rat has a very strong effect. At the same time we should remember that the bactericidal power of the serum does not necessarily represent the entire antibacterial function of the body. In the serum we have none of the body cells, and especially none of the phagocytes, the destructive action of which on some bacteria is well known.

At a time when antitoxic action was not appreciated, Buchner gave the name of alexins (from the Greek, ἀλέξειν, to ward off) to the protective substances of the serum, i. e., to the bactericidal substances, making the observation that they were very labile substances, losing their power spontaneously in a few days when exposed to the air and light, or when they were heated to 55 C. for thirty minutes.

Alexins.

In determining the presence or absence of antitoxic immunity, the toxin of the microbe, of course, must first be in hand. The methods of obtaining toxins will be referred to later. If the animal resists a dose of toxin which, in proportion to weight, produces disease in some other susceptible animal, the tissues or fluids of the first animal may contain antitoxin. It will be indicated later how this result may be obtained even without the presence of antitoxin, the immunity being due to some other obscure cause. If the resistance is referable to the presence of antitoxin, the latter may be detected in the following manner: The animal is bled, its serum collected from the clot, then mixtures of the serum and of the toxin are injected into animals of known susceptibility for the toxin. If the test animal is in this way protected from an otherwise fatal dose of the toxin, it is evidence that the serum contains an antitoxic substance.

Natural Antitoxic Immunity.

Following this method of experimentation, if antibacterial properties are found to the exclusion of antitoxic, the immunity is considered to be antibacterial; and with the converse result it is antitoxic. It is, of course, conceivable that in a given case it might be both antitoxic and antibacterial. In dealing with diseases of which the specific microbe is known and cultivated, the existence of antibacterial or of antitoxic substances can usually be found by the methods described. If the etiology is unknown, as in scarlet fever, measles, syphilis, etc., that is, if the virus and its toxin can not be obtained in quantities, the nature of the resistance is not at present open to determination.

Examples are known in which, in spite of rather high resistance on the part of the animal, its serum contains neither strong antitoxic nor antibacterial properties. This relationship exists between a number of animals and such bacteria as the pneumococcus, staphylococcus and streptococcus. Consequently much is yet to be learned concerning natural immunity.

It is seldom that natural resistance is absolute. Pasteur found that the great immunity of the chicken for anthrax could be overcome by immersing the animal in cold water, the reduction in body temperature supposedly decreasing the resistance. It was stated in a previous section that physical exhaustion, hunger and exposure to cold may also reduce natural resistance. Pestilence and famine often go hand in hand.

Similarly antitoxic immunity usually is relative. The chicken, which withstands a large quantity of tetanus toxin injected into the skin, muscles or circulation, succumbs when the toxin is injected directly into the nervous tissue. As an illustration of natural immunity to toxins, the following table serves a good purpose. The horse is the most susceptible animal for tetanus toxin. If the minimum fatal amount for one gram of horse weight is taken as a unit this scale of resistance for some other animals is obtained (Knorr):

Relative Immunity.

For 1 gram of guinea-pig weight.....	2 units are fatal
For 1 gram of goat weight.....	4 units are fatal
For 1 gram of mouse weight.....	13 units are fatal
For 1 gram of rabbit weight.....	2,000 units are fatal
For 1 gram of chicken weight.....	200,000 units are fatal

In view of the high immunity of the chicken against tetanus one may be led to suppose that its serum would contain a large amount of antitoxin, yet experiments show that it possesses practically no tetanus antitoxin. This fact suggests that there is a distinct type of natural immunity which, it is thought, may be independent of both the antibacterial and the antitoxic properties of the animal. It is now thought that the toxic elements of bacteria are chemical substances (very complex, surely) which are able to injure the tissues, i. e., to cause disease only by entering into chemical union with substances which the cells contain.

Such chemical substances or groups pertaining to the cells will be referred to later under the name of cell receptors. Accordingly, if an animal's cells do not possess groups or receptors which are capable of forming a chemical union with the toxin, the latter would be unable to produce injury, i. e., the animal would be immune regardless of all bacterial or antitoxic properties. This condition, however, is not one which is capable of experimental demonstration, at least at present, but the conditions point irresistibly to its existence in some cases.

Cell Receptors.

We are accordingly led to the conclusion that immunity to toxins is not in all cases antitoxic, in the sense that the

serum contains demonstrable antitoxin; and likewise that immunity to bacteria is not in all cases antibacterial, in the sense that the serum contains substances which are able to kill the bacteria in test-tube experiments.

There is another factor, however, which may throw light on the type of natural immunity just considered. We know that tetanus toxin causes tetanus through its power of uniting with the nerve cells, and we may consider that tetanus is a very fatal disease primarily because of the vital nature of the tissue which it attacks. Now, if the toxin, instead of uniting with the cells of a vital organ, were to combine with cells of less importance to the economy, as, for example, the cells of the subcutaneous tissue, it is probable that we should have no tetanus. In some of the lower animals there is reason to believe that the toxin of tetanus does unite with such tissue (Metchnikoff). Roux and Borrel believe that the greater degree of immunity which the rabbit has over the guinea-pig is due largely to the fact that the rabbit's liver is able to fix a great deal of the toxin. And Metchnikoff has found that the liver of the scorpion, which has an absolute immunity to tetanus, absorbs the toxin and retains it for months.

Summary. By way of summary, then, we may say that the natural blood immunity and tissue (histogenic, Behring) immunity depend on the following factors: Bactericidal and antitoxic powers of the serum and plasma, the destructive effect of the cells, especially the phagocytes, on both bacteria and toxins; a possible absolute non-susceptibility in some cases (the absolute non-existence of suitable cell receptors); the overwhelming distribution of the suitable receptors for the toxin in organs of less vital necessity for the individual, thus diverting it from more important organs.

In order that a pathogenic organism produce a progressively fatal disease in a susceptible animal the following obstacles must be surmounted: The strong defenses of the body surfaces must first be overcome; a local inflammatory reaction which may have been excited must first prove itself to be inadequate for the limitation of the infection; there must be an insufficient supply or activity of antimicrobic and antitoxic processes in the body fluids and cells.

In view of the wide variations in the nature of different pathogenic agents it is evident that the defensive means which would counteract one might be inadequate for another; and inasmuch as animals appear to differ as much in the character of their defensive as microbes do in their offensive powers, there is abundant room for the display of the various phenomena of natural immunity and of natural susceptibility with which we have become familiar.

Hemolysins. In addition to the bactericidal and antitoxic action of many normal serums, they often possess other characteristics which are of the highest interest in the study of immunity. In earlier days it had been noted that the transfusion of blood from one species to another was often fatal to the injected animal. Later investigations showed that this was due to toxic substances in the transfused blood; substances which, above all, destroyed the red blood cells of the injected animal. This action, in which the hemoglobin is dissolved out of the red blood cells, may be reproduced in test-tube experiments by mixing the blood cells of one animal with the serum of another which is toxic (e. g., rabbit blood + goat serum). This is the phenomenon of hemolysis, and the appearance of such a tube is exactly like that seen when blood is mixed with distilled water or even with tap water; i. e., it is a laking of the blood, it loses its opacity and assumes a beautiful cherry-red color. The serum of practically every species contains a hemolytic substance (a serum hemolysin) for some kind of erythrocyte.

Cytotoxins. Some serums also contain toxic agents for other cells; they are generally called serum cytotoxins. The serum of the eel not only contains a strong hemolysin, or hemotoxin, but also a powerful poison for nervous tissue, neurotoxin. Similarly we have normal leucotoxins for leucocytes, nephrotoxin for kidney tissue, etc.

Agglutinins. Another property of many normal serums is that which causes the agglutination or clumping of bacteria, as one sees it in the Gruber-Widal test for typhoid. Even normal human serum may agglutinate the typhoid bacillus, but to a less degree than that of a typhoid patient.

Precipitins. One serum often causes a precipitate in the serum of another animal, or in a bacterial culture filtrate. In considering these facts one becomes conscious of the great complexity of that substance which plays so important a part in immunity and its study—i. e., the blood serum.

(To be continued.)

New Instruments.

COMBINATION QUADVALVE WIRE SPECULUM AND BIVALVE SPECULUM RETRACTOR.*

CHARLES F. SPANGLER, M.D.
KANE, PA.

This instrument is designed to facilitate the inspection of the vulva, vagina and cervix. It is especially serviceable in stout patients, or in patients with relaxed vaginal walls, which close in between the expanded blades of a speculum and obstruct the field of vision. It should be constructed of the most durable quality of steel wire. It is easily rendered aseptic, is self-retaining, and is readily introduced and withdrawn without pinching the tissues. The adjustment is such that the distension of the vaginal vault by the expanded blades draws the cervix well forward within the speculum and toward the vulvar outlet.

FIG. 1

Anteroposterior blades.

FIG. 2

Lateral blades.

FIG. 3

Blades in position.

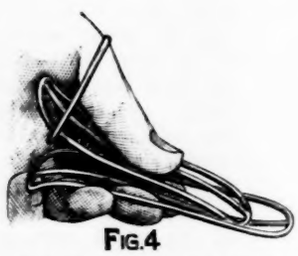

FIG. 4

Method of introducing blades.

The spring lop or vulvar extremities of both sections are intended to be permanently expanded and not compressed for introduction. The location of the cervix is ascertained with the index finger, the anteroposterior blades (Fig. 1) are introduced by placing the thumb through the loop on the anterior blade and the fingers of the same hand under the posterior blade, pressing together the distal extremity only as in Figure 4. This movement carries the blades through the vulva, then the pressure on the blades by the fingers is released and

* Exhibited before the McKean County Medical Society, at Bradford, Pa., Nov. 1, 1904.

the speculum gently pushed into position. The lateral blades (Fig. 2) are next introduced in like manner (Fig. 3).

In removing the instrument, the lateral blades are removed first by withdrawing them one-half or two-thirds and then compressing the distal ends as when introducing. The antero-posterior blades are sufficiently withdrawn, but the distal ends can be compressed in like manner.

FIG. 5

Lateral blades used with ordinary bivalve speculum.

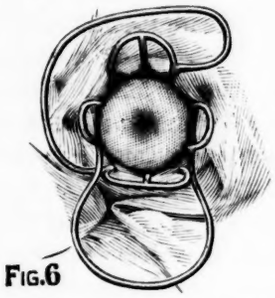

FIG. 6

Speculum in position showing cervix.

In office examinations, in many instances, there is difficulty in securing satisfactory exposure of the cervix without the aid of an assistant. The lateral blades or retractors used in conjunction with any suitable bivalve speculum, as in Figure 5, constitutes a thoroughly efficient quadvalve speculum insuring complete exposure of the cervix, particularly in cases of laceration or of enlargement of the cervix or of undue relaxation of the vaginal walls (Fig. 6).

A NEW SAW ESPECIALLY ADAPTED TO CRANIAL SURGERY.*

H. C. MASLAND, A.M., M.D.
PHILADELPHIA.

It is a matter of common knowledge that the present instruments for opening the skull in cranial surgery are crude and unsatisfactory from many points of view, and some months ago, in making certain bone sections, the idea of utilizing the circular saw occurred to me. This new saw which I have devised (Fig. 1) has a handle heavy enough to prevent vibration, and of such shape as to permit a firm grasp with the hand. On the upper part of the handle there is a shoulder to accommodate the thumb. On the lower aspect of the handle are grooves for the fingers, with a ring for the index finger. This ring protects the finger absolutely from the rapidly revolving saw, and also gives a rigid base to brace, when desired, the handle against the head. I originally provided a sharp pin on the lower edge of this ring to press into the bone to anchor the instrument, thereby preventing slipping of the saw in starting the incision. This was found in practice, however, to be unnecessary, the saw proving to be under perfect control. The gauge to regulate the depth of cut of the saw slides at the side of the saw, and is accommodated in a dovetailed groove at the side of the handle. The end of the gauge shaft is threaded and accommodates a nut set in a recess in the handle. By turning this nut, the gauge slides in or out and permits the saw to cut to any depth, to the finest fraction of an inch.[1] The saw is set in a recess in the handle, and this, with the gauge just described, protects the operator's fingers perfectly from any injury. The saw is attached to a short shaft held in place by a set-screw through the top of the nose-piece of the handle. A thread on the other end of the shaft, with a surrounding threaded collar permits of connection with the flexible shaft and its sheath respectively of an electric motor or dental engine.

This instrument will cut as rapidly as desired through bone of any density. I have had the saw revolving 3,400 revolutions a minute with all vibration a negligible quantity. With a circular saw, of course, one must make incisions in a straight line, but a moment's reflection will show that the curved incision has no real advantage, and is but an inheritance of the compulsory cut of the obsolete trephine. With this new saw, a bone flap of any size may be made, with the least possible amount of bone destruction, and without interference with the vitality of the flap. By making a triangular flap, and then instead of cutting through the last angle breaking it off with a chisel, the periosteal connection is preserved. By tilting the saw a beveled cut can be made, thereby securing a shelf and preventing undue sinking of the bone flap after replacement.

This instrument makes an incision of but one millimeter in width, and it can readily be seen that this promises the very greatest likelihood of union occurring in the healing process.

Inasmuch as the saw can be regulated to cut the finest shades of difference in depth we have ample protection against injuring the brain substance. Even when there are internal ridges of bone if the operator does not choose to spring these loose with his chisel, he can pass a delicate curved probe around the ridge between the dura and the skull and then by pressing the dura away cut the obstructing ridge with impunity (Fig. 2).

I have thus far refrained from referring to the inside guard because many surgeons feel confident enough to control their cuts without its use. However, I have devised it in order to answer every requirement that might arise. This guard is composed of the protecting arm with a T-shaped end, a pivot joint and a handle arm. The joint is of the French lock pattern,

Fig. 1.—Cranial saw.[1]

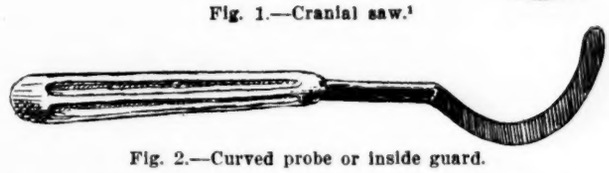

Fig. 2.—Curved probe or inside guard.

with a sufficiently wide bearing surface to prevent lateral motion. The French lock permits the ready removal or placing of the guard in position. The handle arm turns up over the instrument to the shoulder where it is operated by the thumb.

To operate this guard an opening is first made to admit the T-shaped tip, the tip is then adjusted in position between the skull and the dura. Constant pressure of the thumb is necessary to keep the tip in proper apposition to the inner wall of the skull. Suitable stops placed at the joint prevent the arm from contact with the teeth, and also from unnecessary motion in the opposite direction. A spring[1] attached to the arm assists the thumb in constantly drawing up the tip toward the saw. It is necessary to withdraw the tip and to readjust it when starting on a new line of incision, as the narrow cut made prevents the guard from turning corners. A contrivance has been devised for transmitting the power through the handle to the short saw shaft. As, however, the mechanism for this is more complicated and less durable, and as by experience the lateral transmission has not proved objectionable, it has appeared wiser to use the simpler construction.

To sterilize the instrument here shown, it is only necessary to unthread and withdraw the guard, loosen the set-screw holding the shaft, and then to draw out the saw and shaft; all the parts are then exposed and can be thoroughly cleansed.

In closing I might say that though this saw was primarily devised for cranial surgery it will no doubt prove useful in operations on various bones. Its usefulness in removing the calvarium at autopsy is apparent.

An instrument dealer thought that this instrument would prove an admirable saw to cut plaster-of-paris casts.

* Shown before the Philadelphia County Medical Society, Jan. 25, 1905. The discussion by members of the society was printed in THE JOURNAL, February 18, p. 569.

1. Not desiring to obscure the view the inner guard spring is not shown in Figure 1.

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COCCIDIOIDAL GRANULOMA.

It has been known for some time that the lesions which we speak of as tubercles, which are essentially granulation tissue tumors, are not necessarily the result of the action of the tubercle bacillus. In leprosy, syphilis, glanders, actinomycosis, experimental infection with acid-fast bacilli, and, in fact, in the whole series of diseases known as infectious granulomata, lesions are found more or less closely resembling those of tuberculosis. The recent work of Ophüls[1] shows that similar lesions may also be produced by organisms which closely resemble oidia.

Ophüls reviews the history of the class of cases from one of which he isolated the organism which he studied. The first case described originated in the Argentine Republic, but the cases reported since then have nearly all originated either in California or in the neighborhood of Chicago. Nearly all of the Chicago cases have had local skin lesions, while many of those originating in California have been cases of general infection. The organisms in both classes of cases are evidently closely allied, but it seems doubtful whether or not they are absolutely identical. In the cases of general infection there are two forms of onset, one the cutaneous, the other the pulmonary. The clinical picture varies according to the organs attacked and the degree of general involvement. In some cases a skin involvement may exist for years before generalization takes place. The pulmonary cases may run a course suggesting a rather chronic pyemia, or there may be pleurisy with subsequent lung involvement and later sinus formation. In some cases large abscesses form subcutaneously or in the internal organs. The acute cases with multiple skin lesions may strongly suggest glanders. Cases in which the skin lesions predominate may resemble cases of mycosis fungoides, the verrucose form of skin tuberculosis, or there may be rapid infiltration with extensive ulceration.

The pathologic lesions in the generalized cases take the form of miliary nodules like tubercles, and multiple abscesses, usually miliary, but at times large; these lesions are usually scattered throughout the organs. The disease in animals presents the same characteristics. In both man and animals glanders may be very closely imitated; in guinea-pigs even the purulent periorchitis may be present. Histologically the miliary nodules exactly resemble tubercles, and but for the presence of the causal agent could not be distinguished therefrom. Various transition stages between these tubercles and abscesses may be made out, and sometimes areas containing giant cells and more or less resembling fibromyxosarcoma are present. The different lesions seem to be associated with the different stages of the parasite, the tubercles with the old parasites, and the abscesses with the sporulating forms. This latter fact is probably due to the setting free during sporulation of chemical substances chemotactic to the leucocytes.

The parasite was originally described as a protozoön on account of the fact that mycelia are not formed except in culture media, and the earlier observers did not cultivate the organism. Since the first successful cultivation by Moffitt and Ash, the organism has been grown a number of times, and its cultural peculiarities are now fully described. It is not a protozoön, but a parasitic fungus belonging to the ascomycetes group. The spore-like bodies are not oidia, but a modification of them, the so-called chlamydospores. The chief characteristic of the organism is that in the hyphæ the protoplasm is concentrated at certain points in the form of spores, leaving between the spores segments of the original hyphæ which are empty. The chlamydospores can develop on media into new vegetative forms (hyphæ), or in the body into *fruchtkörper* with endogenous sporulation. The adult form of the parasite is seen in the lesions in the form of spherical bodies as much as 30 microns in diameter with a granular protoplasm and a double contoured membrane. The membrane is thick, being from one-fifth to one-tenth of the diameter of the parasite in thickness. Under favorable circumstances sporulation takes place, as many as a hundred spores being formed in one parasite. The life history of the parasite outside of the body is still unknown, as is its intermediate host, if any such is necessary. Cultures are only to be obtained from abscesses, as the organism fails to grow on media if tissue surrounds it.

1. Jour. of Exper. Med., vol. vi, Nos. 4-6.

MICROBIC LATENCY AFTER INFECTIONS.

Not infrequently it happens that some time after an attack of some acute infectious disease, such as typhoid fever or pneumonia, localized inflammatory processes develop in which are found the bacteria that caused the original infection. A variable period of latency, sometimes, in the case of typhoidal infection, extending over years, may intervene between the general disease and the localized process. This curious survival of bacteria—for we must regard most typhoidal abscesses and many post-pneumonic pneumococcal processes as caused by surviving bacteria rather than by new infections—is very difficult to explain, especially when we consider that the patients concerned must be regarded, in a measure at least, as immunized, having passed through a general and often severe infection with the same bacteria that later have set up these local lesions. A somewhat anal-

ogous observation is frequently made in connection with diphtheria, in that more or less virulent bacilli may persist, sometimes for months, in an inactive condition in the throats and noses of persons who have recovered from acute attacks of this disease, whereas generally the bacilli disappear in a much shorter time. Perhaps recurrent attacks of erysipelas, of acute articular rheumatism, and of other diseases are caused by the survival in the tissues, in an active or latent form, of the causative agents of the diseases, awaiting some specially favorable moment, or the entrance of some entirely new factor, in order to manifest again their original activity. Malaria also furnishes striking examples of microbic latency in the infected host. Mention may be made, too, of the interesting theories of Baumgarten and Behring in regard to the rôle of latent tubercle bacilli which, entering the body early in life, are assumed to remain inactive for years before the suitable occasion arises for pathogenic action. According to Baumgarten the original infection may be intrauterine, according to Behring it is alimentary, from cow's milk, the bacilli entering by way of the digestive tract. Neither theory seems to have a very broad basis of either observation or experiment, but the clinical history of the various localizations of tuberculosis in man furnishes many examples of the latency and of the persistence of the bacillus, and the recent studies of old, apparently healed tuberculous foci have brought to light many instances of encapsulated bacilli still capable of causing active tuberculosis, at least in animals.

Recently this microbic latency has received special consideration from the experimental side. Tizzoni and Panichi[1] have found that virulent pneumococci injected in otherwise fatal doses into animals either immunized or protected by antipneumonic serum may remain alive but inactive in the circulation for weeks and months. The cultures of such latent pneumococci from protected animals show deviations from the usual type and are without pathogenic effect unless specially treated. The Italian investigators assume that in immunized animals, as well as in those injected with antipneumonic serum, two sets of actions result in this case, namely: On the one hand a neutralization of the toxic products set free by virulent pneumococci in the infected organism, to which the usual physiologic disturbances must be ascribed, and, on the other hand, a radical change in the biologic characters of the cocci so that they merely persist without much, if any, pathogenic power. Heretofore, no very pertinent explanation has been given of the survival in latent form of microbes in infected persons. From the observations here referred to, we have reason to believe that, in some cases at least, microbic latency may be due to changes in the nature of the microbe, by virtue of which it sometimes can survive in otherwise highly unfavorable conditions, without manifesting its usual powers unless some special condition arises.

1. Centralbl. f. Bakt., 1905, Referate, xxxvi, 25.

THE POSSIBILITIES FROM FELLOWSHIP IN THE COUNTY SOCIETY.

There comes to notice the story of recent proceedings in a county medical society coupled with the statement that the society refused to pass resolutions against secret commissions and contract practice. One who feels defeated and discouraged complains that the new form of organization compels him to retain his membership "in a county society whose morals he may despise." Further, he is quoted as saying: "The present plan is to encourage quackery and a disregard for ethics within the profession, and to chase from the organization those who can not let themselves down to the lower level." Is there reason in this sharp denunciation? Is there any substratum of fact on which to base such dreary pessimisms? Is organization a failure? Is there logic in the conclusions? These are sober questions and they need to be met squarely.[1]

As all reputable physicians in any county are eligible to membership in the county society, it would seem that a county had been found in which a majority favor contract practice and secret commissions. If this is so, the present form of organization provides ample means for the relief of the minority. The county society is an autonomous unit, it is true, but its actions affecting membership are subject to review by the state association through designated officers. Finally, an appeal may be taken to the American Medical Association. A county society that encourages quackery can not exist, except by unanimous concealment of action. That the story is out in this instance shows lack of such meretricious unanimity, and the freedom for appeal first to the councilor, then to the entire council, and finally to the house of delegates of the state association, with last resort to the American Medical Association, is still open.

The facts of the case, and we obtain them from the complaining member, are sufficiently discouraging, but not nearly so hopeless as to warrant "quitting." At a meeting of 21 of 42 members there was discussion of amendments directed against contract practice and secret commissions. Seven are said to have spoken against adoption of the amendment to prevent members engaging in contract practice, though each one admitted such practice to be wrong, while, in their opinion, locally necessary at present. Four spoke in favor of adoption, one of whom moved, in view of the opposition, to table the amendments for five years, and the motion carried. No discussion of the secret commission is reported. There was no vote on either amendment. A resolution was adopted condemning contract practice unless the remuneration approaches the minimum for similar work in private practice.

1. It should be emphasized once more that the county society plan was not a new one when it was adopted four years ago as the basic principle in the general reorganization scheme. Such organizations as those in Alabama, Connecticut, Indiana, New York (both the society and the association) and Pennsylvania, which have been on the county society basis, some of them for nearly a century, did not find that it "encouraged quackery."

What is needed by this society is help from the state association. Of course, conditions in a large city differ from those in a smaller town, but, in either case, those who wish to see contract practice abolished must get to work, with the help of the councilor and others, and create a sentiment against the evil. Legislation is no remedy, and its failure of enactment no due cause for discouragement. With the sentiment said to exist in the county, if the by-law had been adopted it could not be enforced. Once having created a healthy sentiment among the majority, a simple agreement, reached gradually and accompanied by suasion applied to those of the laity demanding contract practice, will abolish the evil, at least in great part. A better opportunity for experimental trial of remedies to meet the demand for such practice can hardly be imagined. Those now disheartened have an enviable chance to lead us to practical methods of reform. It is the time for hope and action. What better feature of our plan of organization could there be than that which compels the upright physician to associate with and to uplift his less fortunate brothers whom necessity has led into error? No need for those of principle to "let themselves down to the lower level," but great need to keep on holding out the hand of fellowship to the poor fellows who are down.

TRUTH AND POETRY CONCERNING URIC ACID.

VIII.

Coincidently with the study of the methods by which uric acid is formed and destroyed in the body, efforts were made to determine the exact localization of these processes. The site of formation of uric acid was one of the earliest points to be studied, and the problem was approached in various ways. At first, certain organs supposedly related to uric-acid formation were removed and the metabolic changes following the operation studied. Thus an idea had early gained ground that uric acid is formed in the kidneys. Zalesky,[1] who was unable to demonstrate the presence of uric acid in the normal blood of birds and snakes, declared that on tying the ureters deposits of uric acid appear first in the kidneys, then in the adjacent lymphatic system and, later, in the blood and in the other tissues. In other words, the deposits gradually spread from the kidneys as a center, and this mode of distribution led him to the firm belief that the kidneys form the uric acid. It was shown later by Meissner,[2] however, that uric acid is present in the normal blood of birds, and other investigators (Chrzonszczewsky, 1866; Colosanti, 1881; Pawlinoff, 1875) proved that the deposition of uric acid and urates does not proceed so regularly from the kidneys as a center as Zalesky had thought; indeed, the findings of these observers rather pointed toward an extrarenal origin for uric acid. In birds it was shown that local injury to the tissues anywhere often causes a deposition of uric acid, and it seemed likely that the predominance of deposits in and about the kidneys in Zalesky's experiments might fairly be attributed to the trauma.

A second mode of ascertaining the site of uric-acid formation consisted in the determination of the quantities of uric acid present in various organs. This was the method followed by Meissner, who, on account of the large amount of uric acid present in the liver of birds, advanced the theory that the liver is the organ in which the substance is built. Others confirmed Meissner's view in that they found much uric acid in the livers of the ox, pig, horse and man. Against this view it was urged first, that only a small amount of uric acid is present in the liver of the dog; second, that uric acid is present in considerable quantities in other organs, like the spleen (Scherer, Ranke); and third, that the presence of uric acid in an organ may mean only its accumulation, not its formation, there.

A third mode of searching for the building place of uric acid was resorted to; certain organs of the body were isolated and the substances from which uric acid can be formed were passed through them. The amount of uric acid formed could then be measured directly, control experiments showing that the uric acid output was not due simply to the washing of preformed uric acid out of the organ. This, or a modification of it, is the method which has been used by Spitzer,[3] Wiener,[4] and especially by Kowalewski and Salaskin.[5]

Without entering into the details of the various experiments or the discussions to which they have given rise, it may be said that the formation of uric acid by oxidation of nuclein or xanthin bases has been shown to take place in a great many different organs of the body, while the formation of uric acid by the synthetic method occurs chiefly, if not solely, in the liver.

Of equal interest are the studies made to determine the site of uric-acid destruction in the body. The researches of Stokvis (1861), Ascoli (1898), M. Jakoby (1899), Wiener (1899), and Croftan (1903) indicate that various organs destroy uric acid and, indeed, that some of the organs that build it also decompose it. There is marked variability in different animals in this regard; in carnivorous and omnivorous animals it would appear as though the liver, for instance, is actively destructive of uric acid while in herbivorous animals the synthetic production of uric acid would seem to predominate over the destroying power of the organ. Croftan's studies of human tissues indicate that, bulk for bulk, the human kidney destroys more uric acid than

1. Zalesky: Untersuchungen über den uraemischen Process und die Funktion der Nieren, Tübingen, 1866.
2. Meissner, G.: Beiträge zur Kenntnis des Stoffwechsels im tierischen Organismus, Zeitsch. f. rat. Med., vol. xxxi, 1868, p. 144.
3. Spitzer, W.: Die Ueberführung von Nukleinbasen in Harnsäure durch die Sauerstoffuebertragende Wirkung von Gewebsauszügen, Pflüger's Arch., vol. lxxvi, 1899, p. 192.
4. Wiener, H.: Ueber Zersetzung und Bildung der Harnsäure im Tierkörper, Arch. f. exper. Path. u. Pharmak., vol. xlii, 1899, p. 375.
5. Kowalewski, K., und Salaskin, S.: Ueber die Bildung der Harnsäure in der Leber der Vögel, Ztschr. f. physiol. Chem., vol. xxxiii, 1901, p. 210.

the liver, the liver more than the muscles, the muscles more than the spleen and the blood. If one includes the relative bulk of these organs, as compared with the bulk of the whole body, in the calculation, he finds that the muscles destroy most uric acid, next the kidneys, and then the liver, the spleen and the blood.

There is room for much valuable work on the ferments or catalyzers which are responsible for uric-acid formation and for uric-acid destruction. Only a beginning has been made in this direction, but the field is so promising a one that it will be strange if a number of investigators are not soon attracted to it.

THE TOXIC EFFECTS OF FORMALDEHYD.

In another editorial we call attention to the increasing use of formaldehyd, and to the effects which it produces locally on the skin of the hands. Inasmuch as its use has been suggested as an inhalant in respiratory diseases, the recent work of Fischer[1] on the toxic effects of the various formaldehyd preparations is of interest. In this work, which was experimental, the drug was introduced by various routes into the bodies of animals. In some instances animals were subjected to the fumes in rooms which had been fumigated in the ordinary way, in other instances the drug was introduced into the stomach, peritoneal cavity or subcutaneous tissues. The general effect was the same whatever route was used. Not only were local lesions of an inflammatory character produced in all instances, but there was evidence that the drug was absorbed and produced important lesions of the parenchymatous organs, especially of the liver and kidneys. Of especial importance is the fact that the inhalation of the drug caused bronchitis and pneumonia. These findings show that the use of the drug by inhalation is not without danger, and it is, indeed, doubtful if it should be used in this way. The irritating characteristics of the drug are such that it should be used with great caution whatever method is employed.

SHIP MEDICINE CHESTS.

A recent investigation conducted by the *Pharmaceutical Era* showed that American tramp steamers, freighters and coasting schooners are not sufficiently provided with necessary drugs and medical supplies. A Federal law requires all American passenger-carrying vessels to provide medical attention and drugs, even for short voyages, but no such provision is made for purely freight-carrying vessels. British vessels, on the other hand, must carry medical stores suitable to the particular class of vessel, and a book of instructions for dispensing such supplies. It is stated that no British ship is permitted to leave even a foreign port unless its locker contains the prescribed number of remedies, but that many American ships, unless engaged in the passenger service, carry only such remedies as the agent's fancy may dictate. One ship carried only a few pounds of Epsom salts and a half gallon of castor oil. In Great Britain medical inspectors from the board of trade are expected to examine the medical stores of outgoing vessels, and are held responsible for the quality as well as for the quantity of the drugs. They can prevent a vessel leaving port until properly stocked with drugs. It should be the same with us.

1. Jour. Exper. Med., vol. vi, Nos. 4-6.

THE NEWSPAPERS' VERSION OF OSLER'S FAREWELL.

If Dr. Osler had had the foresight to engage the clipping bureaus of the country, what a unique portfolio of newspaper clippings he could have taken to staid old Oxford, and how the dons would shudder if they could read all the things that the American newspapers have said about their new associate. They would certainly be shocked, to say the least. The newspapers have given him some pretty severe "jolts," just because a reporter said he said what he did not say. The whole affair has been a reflection on the intelligence of the managing editors of our newspapers; Osler's own life is a refutation of the principle he was reported to have enunciated. Since he was 40 years of age his life has been full of activity; he has been accomplishing things. What one says must be weighed by the motives of the speaker, as well as by the effect the talk is desired to have on the listeners. Osler was talking to and for the young man, to encourage him to work during his youthful, manly vigor. No man knows better than Osler that old age is a term that is applied arbitrarily to any specified age; that some men are old at 30, while others are young at 80. We are all of us as old as our arteries, and as young as we feel. A reading of what Osler did say, a full abstract of which we are printing this week, will show that he said some very sensible things in that address, and that he did not advocate chloroforming at 60.

THE EFFECTS OF FORMALDEHYD ON THE SKIN AND NAILS.

It is difficult to realize that the use of formaldehyd has become so widespread, not only in medicine, but in the trades, that the annual production has reached 400,000 kilograms. This means that a large number of individuals daily must be more or less exposed to its action. The changes in the nails and skin which may result from such exposure have recently been described by Galewsky.[1] His cases were all in laboratory habitués who used the substance in pathologic or histologic work. The changes occurred in most instances long after the exposure to the formalin, in some cases from six to nine months having elapsed between the handling of the formaldehyd and the appearance of the lesions. The first symptom was a brownish discoloration of the nails, and this was followed by softening, a painful splintering and thickening in the neighborhood of the matrix. In some cases the lesion was confined to the nails, but in others the skin of the hands also suffered. The skin lesions took the form of an eczematous eruption, which at times extended as far as the wrist joint; this was accompanied by inflammatory edema and by vesicle formation. The nail condition differed from that which often accompanies ordinary eczema, in which the nails are generally hard and brittle. Nearly all the patients complained of the

1. Münchener med. Woch., vol. lii, No. 4, January 24.

burning and boring sensation in the ends of the fingers and the nails. The affection is an unusually stubborn one, and may last as long as a year and a half. It seems probable that it is not confined to laboratory workers, and those whose work is in skin diseases should be on the look out for the conditions in those who use formaldehyd in their work. Dermatologists also should be cautious in the use of the drug in hyperidrosis and similar conditions in which it is sometimes used.

THE SECRET NOSTRUM VS. THE ETHICAL PROPRIETARY PREPARATION.

For years the proprietary medicine question has been a perplexing problem for physicians, and as the articles of this class increase in number, the question becomes more vexed and more serious, and its solution more urgent. In taking up the subject, it may be stated at the outset that there is no more serious objection to a proprietary medicine *per se* (i. e., one protected by a copyright or by a trade-mark) than to one that is protected by a patent; for example, one of the synthetic chemicals.[1]

Technically, there is no difference between the proprietary medicines manufactured for physicians' use and the "patent medicines" exploited to the public, both being protected simply through copyright or trade-mark names. Yet the relation of the physician to these preparations is very different; about the latter he has little direct concern, save that he regrets that our laws permit the foisting on a suffering and unsuspecting public of preparations that are usually dangerous and always irrational. In the former he is directly and intensely interested, for they compose a part of the armamentarium which he is expected to use. On them he often has to depend, or at least does depend, consequently on them rest his success and the health, sometimes the lives, of those who place themselves in his care. In theory, they reflect the advance made in pharmaceutical science; in fact, if we take the greater number of them as our criterion, they discredit pharmaceutical science, for the character of this greater number is such that they are creditable neither to those who make them nor to those who use them.

At first, these preparations were introduced under pharmaceutical or descriptive names; they were of well-known composition, represented elegant preparations of standard formulæ, and were manufactured by pharmaceutical houses which took pride in their products. These preparations the physician welcomed as an advance in pharmacy, and he gladly specified in his prescriptions the name of the manufacturer whose product he desired.

Such were the original prescriptions for elixirs, syrups, pills, etc., of the manufacturing pharmacists. Some thirty years ago, however, there appeared, one by one, preparations bearing coined names, protected from imitation by copyright or trade-mark, with formulæ more or less mysterious and fictitious—in other words, secret. By making extravagant claims and by persistent exploitation in various ways, the manufacturers induced physicians to use them, and as they were usually the simplest kind of mixtures, requiring little, if any, machinery or skill in their compounding, and being composed of inexpensive drugs, the profits were large. Thus the field for commercial enterprise became an enticing one. The manufacturer might be an individual with no pharmaceutical knowledge and with his identity hidden under the anonymous name of some chemical company; thus, the better to impose on the credulous doctor, he combined the secrecy of his preparation with the mystery surrounding its manufacturer. With their fancy therapeutic or disease-suggesting names and with extravagant claims regarding their therapeutic value, these medicines appealed to a certain class of doctors; they were convenient, palatable, and, at least, satisfactory placebos. Further, they saved the doctor the trouble of writing a full prescription. It was not long, however, after these preparations became popular with the physician before they became popular in the true sense. The fancy, catchy names which caught the physician caught the layman as well, and the latter, finding not only full directions for use, but the names of the diseases in which the remedies were indicated, naturally bought them in preference to the so-called "patent medicines," for were these remedies not endorsed by the "faculty," and had they not testimonials from "the most prominent physicians"! Thus the physician became the unpaid pedler of secret nostrums; thus he encouraged his patient to prescribe for himself, and thus, as the secret nostrum manufacturer became richer, the physician became poorer.

All proprietary medicines, however, must not be classed as secret nostrums. While a few reputable manufacturing pharmacists have not been able to resist the temptation to sacrifice their good names by manufacturing and by exploiting preparations that are nothing more nor less than secret nostrums, and while so many physicians seem to be content to use such preparations, there are plenty of honestly made and ethically exploited proprietary preparations that are therapeutically valuable, and that are worthy of the patronage of the best physicians. In spite of all with which it has had to contend, the science of pharmacy in America is progressing, and is still leading the world. But how is the physician to separate these preparations which are ethical from those which are not? He is not supposed to be a chemist or a pharmacist, and if he were, he has neither time nor inclination to examine all the products he is asked to prescribe, or to inquire into the standing of those who exploit them. The number has become so great that to attempt to separate the good from the bad is bewildering, and no one individual is courageous enough even to try. The result of it all is that the educated, thinking physician—he who is honest with himself and with his patient—refuses to prescribe any proprietary mixture; he classes all as secret nostrums, and lets it go at that. What else can he do?

For many years the separation of the legitimate chemical and pharmaceutical preparations from those which we choose to call secret nostrums has been a dif-

1. It is acknowledged that the manufacturer should be protected when he has originated something of value to the public or to the profession. It is not acknowledged, however, that this protection should be unlimited, as is the case with the trade-marked or copyright-named articles; a protection for a limited period, such as a patent gives, is just and fair, but an unlimited protection is not.

ficult task for those conducting medical journals, whose advertising pages it was desired to keep free from unethical advertisements. The Board of Trustees of the American Medical Association has found the question most difficult of solution, and it has been before the board at nearly every meeting for many years. Ten years ago the board formulated certain rules, the basis of which was that the formula should be published; this, however, has proved very unsatisfactory. No manufacturer would furnish a working formula, and yet, without this, it is impracticable, except in very few instances, to verify the statements made regarding the composition of an article. Consequently, the claims made by the manufacturers had to be accepted, which means that the personal equation had to be considered in giving a decision, and this is not always a safe basis for sound judgment. It has long been recognized by those who have given thought to the question that a secret nostrum can not be changed into an ethical preparation by attaching to it an incomplete formula; further, the problem is too complex to be solved so easily.

Five years ago we published a series of articles on "The Relation of Pharmacy to the Medical Profession." In these articles we discussed the problem in all its phases, the difficulties connected with the question were explained, and the fact was recognized that physicians can not distinguish between the preparations that are worthy and those that are unworthy. The remedy suggested was a board of control, to be composed of pharmacists and chemists, which should pass on all medicines offered for insertion in the advertising pages of THE JOURNAL. Although its execution was deferred, the idea has never been abandoned, but has been kept in view ever since.

One objection to the original idea was that the results would be negative, except in so far as they applied to the advertising question. The suggestion finally was made to broaden the scope of the proposed board by making its functions similar to those of the Committee on Revision of the United States Pharmacopeia; in other words, to have it take up the work where that committee leaves off, and to publish in book form a list descriptive of the preparations which conform to the required standard, but which are not official. For more than a year this idea has been under consideration and development. Opinions regarding its practicability were obtained from many of the leading pharmacists and chemists of the country. In a quiet way tests were made regarding the practical working of the proposed plan, as it affected certain phases of the question and certain articles, and full consideration was given to the results to be expected, as well as to the possibilities and to the limitations, before the Board of Trustees finally authorized the creation of the Council on Pharmacy and Chemistry, the name adopted rather than "board of control," as originally suggested.

It is expected that in the immediate future a corps of medical consultants will be formed, to be composed of physicians connected with the large hospitals in various parts of the country, who will make physiologic and therapeutic tests of such preparations as it may be necessary to submit to such investigation. It is also in contemplation to establish a chemical and drug laboratory in the American Medical Association building, to be placed in charge of a competent chemist, who will examine such preparations as may be found necessary.

As some of our readers may not know all the members of the Council on Pharmacy and Chemistry, it will not be out of place to give the positions they occupy: Arthur R. Cushny is professor of pharmacology in the Department of Medicine and Surgery of the University of Michigan. He has recently been called to the professorship of pharmacology in the Medical Department of University College, London, as was announced in THE JOURNAL some weeks ago. Dr. Cushny will continue with the council until he removes to England, when he will assume the position of corresponding member. C. Lewis Diehl is professor of pharmacy at Louisville (Ky.) College of Pharmacy, vice-chairman of the Committee on Revision of the U. S. Pharmacopeia, chairman of the Committee on Revision of the National Formulary, and has been for twenty-eight years reporter of the progress of pharmacy for the American Pharmaceutical Association. C. S. N. Hallberg is professor of pharmacy in the University of Illinois School of Pharmacy, a member of the Committee on Revision of the U. S. Pharmacopeia, a member of the Committee on Revision of the National Formulary, and has been for five years secretary of the Section on Pharmacology of the American Medical Association. Robert A. Hatcher is professor of pharmacology in Cornell University Medical School, and joint author of "A Text-Book of Materia Medica," by Hatcher and Sollmann. Lyman F. Kebler is chief of the drug laboratory of the Department of Agriculture at Washington, D. C., and has done much of the chemical work in the exposition of certain fraudulent patent medicines. J. H. Long is professor of chemistry in Northwestern University Medical School. Frederick G. Novy is professor of hygiene and physiologic chemistry in the Department of Medicine and Surgery of the University of Michigan. William A. Puckner is professor of chemistry in the University of Illinois School of Pharmacy. Samuel P. Sadtler is professor of chemistry in the Philadelphia College of Pharmacy, the author of "A Text-Book on Chemistry," associate editor of the U. S. Dispensatory, and a member of the committee on Revision of the U. S. Pharmacopeia. Julius O. Schlotterbeck is professor of pharmacognosy in the University of Michigan School of Pharmacy. Torald Sollmann is professor of pharmacology in Western Reserve University. Julius Stieglitz is associate professor of chemistry in the University of Chicago and the author of several works on chemistry. Martin I. Wilbert is apothecary to the German Hospital of Philadelphia. H. W. Wiley is chief of the Bureau of Chemistry of the Department of Agriculture, Washington, D. C.

We quote below the preliminary announcement of the council in the form of a circular letter to the manufacturing pharmacists of the country. We hope that every reader of THE JOURNAL is sufficiently interested in the movement to read it.

COUNCIL ON PHARMACY AND CHEMISTRY.
CHICAGO, Feb. 28, 1905.

To the Manufacturing Pharmacists and Chemists of the United States and to Others Concerned:

As the culmination of plans which have been under con-

sideration for the past two years, the Board of Trustees at a meeting held Feb. 3, 1905, created by resolution an advisory board to be known as the Council on Pharmacy and Chemistry of the American Medical Association. The organization of the council was perfected at Pittsburg, Pa., Feb. 11, 1905, and it herewith presents the following statement:

PRELIMINARY ANNOUNCEMENT.

It is the immediate purpose of the council to examine into the composition and the status of the various medicinal preparations which are offered to physicians, and which are not included in the United States Pharmacopeia, or in other standard text-books or formularies. These preparations will include the synthetic chemical compounds, as well as the so-called proprietaries and pharmaceutical specialties put out under trademarked names. Preparations which conform to the standard established by the ten rules governing the matter, will be incorporated in "New and Non-Official Remedies," a book to be published by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The general need of an accessible, authoritative work of reference of this character is obvious, for at present there is no such book to which the physician can refer. Its value will be proportional to its completeness. It is, therefore, proposed to be as liberal in approving articles for the book as is consistent with justice and equity to the public, to the manufacturing pharmacist and chemist and to the physician. The acceptance of articles will be determined by the appended rules, an examination of which will show that they are sufficiently liberal to permit the admission of all articles offered to the medical profession that are honestly made, ethically exploited, and worthy of patronage by intelligent physicians.

The acceptance of an article will be based on a careful and unprejudiced examination of the accessible information from all sources, and in compliance with the adopted rules. An acceptance, however, is not to be interpreted as an endorsement, neither is omission from the list to be construed, in every case, as condemning an article; it may mean that the necessary information has not been obtained. The council does not pass judgment on the therapeutic value, but on the ethical status only. The council does not presume to dictate what preparations should be prescribed; nor is it the present intention to conduct an active campaign against fraudulent products; but merely *to supply necessary and desirable information concerning those which it considers unobjectionable.*

The plan for the work is briefly as follows: All available information regarding a product will be secured from the manufacturer and from other sources. This information, together with specimens of the article, will be submitted to a committee of experts, who will examine critically into the product, consider the claims made for it, and make a report. On the basis of this report, the council will accept, reject or hold for further consideration. If accepted, the information will be condensed and arranged somewhat on the plan of the United States Pharmacopeia, but with the addition of brief pharmacologic and therapeutic data. The council believes that there are many articles, at present not recognized by the Pharmacopeia, which comply with the required standard and do not need any further investigation. In this class come many of the synthetics as well as many well-known pharmaceutical specialties. These are now being written up and it is proposed to issue the first edition of the book as soon as possible. No charge will be made for representation in the book.

As fast as new articles are accepted, all information regarding them will be published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and will be incorporated in the next edition of the book.

The council appreciates the importance and difficulties of the work to be undertaken and does not expect to take a step forward without being sure that it is right and just to all concerned. It does not dare to hope for perfect results and can only promise to strive earnestly, honestly and impartially to avoid serious errors of commission and omission. It asks for the hearty co-operation and assistance of those it believes to be interested in the work—the entire medical profession and all honorable manufacturing pharmacists and chemists. Criticisms and suggestions will be welcome.

RULES GOVERNING THE ADMISSION OF ARTICLES.

The following rules are adopted to guide the Council on Pharmacy and Chemistry of the American Medical Association:

(The term "article" shall mean any drug, chemical or preparation used in the treatment of disease.)

RULE 1.—No article will be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article, be furnished for publication. (Sufficient information should be supplied to permit the council to verify the statements made regarding the article, and to determine its status from time to time.)

RULE 2.—No chemical compound will be admitted unless information be furnished regarding tests for identity, purity and strength, and, if a synthetic compound, the rational formula.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, cosmetics, foods and mineral waters, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to vaccines and antitoxins nor to advertising in medical journals, nor to literature distributed solely to physicians.)

RULE 5.—No article will be admitted or retained about which the manufacturer, or his agents, make false or misleading statements regarding the country of origin, raw material from which made, method of collection or preparation.

RULE 6.—No article will be admitted or retained about whose therapeutic value the manufacturer, or his agents, make unwarranted, exaggerated or misleading statements.

RULE 7.—Labels on articles containing "heroic" or "poisonous" substances should show the amounts of each of such ingredients in a given quantity of the product.

RULE 8.—Every article should have a name or title indicative of its chemical composition or pharmaceutic character, in addition to its trade name, when such trade name is not sufficiently descriptive.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration should be furnished the council.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished. If patented in other countries, the name of each country in which patent is held should be supplied, together with the name under which the article is there registered.

EXPLANATORY COMMENTS ON THE RULES.

Rule 1.—Certainly no one can object to this rule. The physician not only has the right to know, but it is his duty to know, the composition of medicines he prescribes for his patients. He may not be interested in the details of the method or of the process of manufacture of an article, but he should know what medicinal agents it contains, and the amounts represented in a given quantity of the article.

Only in exceptional instances is it necessary for the physician to know the solvent, vehicle or other diluent, or the particular flavoring agent which may have been employed. For this reason, while the council desires the formula and the details as to the method of preparation to be sufficiently complete to enable it to verify the correctness of the assertions made regarding an article, the description to be published will usually consist only of a statement of the amount of each medicinal agent or ingredient in a certain quantity—generally

the ordinary dose—of the article, and in some instances the general character of the solvent or vehicle and flavors.

In preparations for external use, the therapeutic efficiency is greatly influenced by the nature of the vehicle. Therefore, in such preparations, the character of the vehicle or base should be stated, so that it may be known whether the article is penetrative or simply protective.

Rule 2.—In order to avoid errors in the case of chemical compounds and to guard against adulterations, lack of potency or strength and mistaking one chemical for another, it is necessary to have at hand suitable identity tests. Where these facts have appeared in the literature, or in standard textbooks, reference to them will be sufficient, but with new chemicals, especially synthetics, the manufacturer or his representatives will be required to supply such tests to the council, together with the rational or structural formula, in order that an intelligent opinion of these products may be obtained.

Rule 3.—While the correctness of the principle that physicians can not be expected to favor any medicine which is exploited to the lay public will be readily conceded, this rule is to be modified in its application to articles not strictly medicinal.

Rule 4.—This rule may appear to some as radical, and yet on consideration it will be found just to the public, to the physician, to the manufacturing pharmacist and chemist, and also to the retail druggist. It must be remembered that it applies only to the package, and to the labels, circulars, etc., accompanying it. It does not in any way interfere with advertising, circulars, literature, etc., furnished to physicians. Experience has clearly shown, however, that it is not safe to enumerate on the package the diseases in which an article may be indicated, since this is also the means by which the laity, who are not competent to determine whether or not its employment is safe and proper, may be induced to continue its use or to recommend it to others quite regardless of the evident dangers of forming drug habits or of doing serious injury by employing a remedy that in reality may be contraindicated. It is the physician's prerogative to determine in what disease the article may be indicated, and he is not supposed to go to the drug store for his knowledge regarding this. It is not the function of the pharmacist to recommend or to prescribe medicines, but only to be familiar with their pharmaceutical and chemical characters, strength and dosage and with the best forms of administration.

It is asserted that the naming of diseases on the label of the package is necessary, because many physicians will be unable to tell from the therapeutic properties alone in what diseases a medicinal article may be indicated. This may be true with a certain class of doctors, but it is certainly not true with the vast majority of the educated, progressive physicians of America, and this is the class whose interests are concerned in this movement. There may be some exceptional articles, such as foods, digestants and mineral waters, in which the therapeutic properties alone may not sufficiently indicate the use, and in these cases, perhaps, reference may be made to certain symptoms; if such references appear they will be carefuly considered. Antitoxins and vaccines come under this exemption. The council, however, is unanimously of the opinion that this method of exploiting the medical profession is one of the principal causes which have made the best physicians hesitate to prescribe any proprietary medicines, have led others into irrational therapeutics, have made pharmaceutical tyros believe that they could prescribe just as well as the physicians, and have been the means of causing scores of these medicines to be used for self-medication by the laity, to the detriment and sometimes to the serious and permanent injury of the person taking them. The physician would prefer that the manufacturer confine himself to furnishing the articles and reasonable information regarding their identity, quality, strength and pharmaceutical and chemical character, leaving the physician to indicate in what diseases they should be used.

It is believed that the application of this rule will most quickly determine what manufacturers would rather have the preference and favor of the vast majority of the medical profession and of the members of the American Medical Association than the doubtful support of a rapidly disappearing minority of practitioners.

Ample time will be given manufacturers to conform to this rule, and also to Rule 8, entailing changes in labels or in other printed matter.

Rule 5.—While this is a rare contingency, yet in the past many rank frauds of this nature have been perpetrated on the profession, and this rule will have a tendency to prevent such attempts in the future.

Rule 6.—As in the preceding instance, this rule will have the tendency to restrict manufacturers or agents in their claims as to the therapeutic superiority of their products, without interfering with any reasonable assertions, especially when such are confined to clinical data from responsible medical men.

Rule 7.—For the information of the pharmacist or dispenser, and to enable him to act as a safeguard to the patient and to the physician, all medicinal articles containing such potent agents as the poisonous alkaloids and other organic substances and the salts of some of the metals, should have the exact amount of these ingredients contained in the average adult dose stated on the label. A list of these potent substances will be prepared for more specific information.

Rule 8.—In order to prevent the confusion now existing with reference to many articles known only by more or less arbitrarily selected or coined, usually protected, names, it is necessary that every article which is intended solely for physicians' use or prescription be designated by a scientific title or by a name descriptive of its pharmaceutical character, and, as far as practicable, of its principal medicinal constituents. Synthetic chemical products should give the true chemical constitutional or structural name, in addition to the trade name. The application of this rule will enable physicians to use many of these articles which at present they are afraid to use because of uncertainty as to the identity—owing to the similarity in the names of many of these entirely different products—or prefer not to prescribe in order to avoid criticism and the danger of self-prescription by their patients. This provision will thus be of great benefit to manufacturers of meritorious products, will relieve pharmacists of many trying situations in interpreting correctly the names of articles desired by physicians, and will protect both physicians and laity from the evils named.

The council will use reasonable discretion in enforcing this rule with reference to trade names of long-established articles.

Rules 9 and 10.—This information is desired to enable the council, and others interested, to determine the legal status of these articles and for ready reference through publication.

Respectfully submitted,

ARTHUR R. CUSHNY, Ann Arbor.
C. LEWIS DIEHL, Louisville.
C. S. N. HALLBERG, Chicago.
ROBERT A. HATCHER, New York.
L. F. KEBLER, Washington.
J. H. LONG, Chicago.
F. G. NOVY, Ann Arbor.
W. A. PUCKNER, Chicago.
SAMUEL P. SADTLER, Philadelphia.
J. O. SCHLOTTERBECK, Ann Arbor.
GEO. H. SIMMONS, Chicago.
TORALD SOLLMANN, Cleveland.
JULIUS STIEGLITZ, Chicago.
M. I. WILBERT, Philadelphia.
H. W. WILEY, Washington.

Members of the Council on Pharmacy and Chemistry, American Medical Association.

Medical News.

ILLINOIS.

Fire Loss.—The office of Dr. Charles W. Lillie, East St. Louis, editor of the St. Louis *Clinique*, was burned February 3. The loss was $2,000; insurance, $800.

Dr. Norbury Ill.—Dr. Frank P. Norbury, Jacksonville, editor *Medical Fortnightly*, was operated on February 23 for appendicitis, and is progressing satisfactorily toward convalescence.

Itinerant Vendor Fined.—"Dr." J. H. Bixler, an itinerant vendor, was fined $300 and costs in Kankakee last week, for practicing without a license. The suit was brought by the State Board of Health.

Dunning Consultants.—The following appointments to the consulting staff of the Cook County Institutions, Dunning, have been made by President Brundage: Drs. Frank Billings, William A. Evans, John B. Murphy, Hugh T. Patrick, Arnold C. Klebs, B. McPherson, Linnell, J. Rawson Pennington, Charles S. Williamson, Alice Hamilton and Edward J. Farnum.

Hearing on Tuberculosis Sanatorium Bill.—The appropriation committee of the house of representatives will give a hearing, March 7, on the substitute bill 330, creating a state sanatorium for consumptives. The bill has the approval of the State Board of Health and of the State Association for the Prevention of Tuberculosis.

Chicago.

Bequest.—By the will of Mrs. Harriet A. Jones, Presbyterian Hospital obtains a $15,000 bequest.

Eye, Ear, Nose and Throat College Election.—At the annual meeting of the stockholders of the college, Drs. William A. Fisher, Adolphus G. Wippern, Thomas Faith, H. W. Woodruff, and John R. Hoffman were re-elected directors. The directors then re-elected Dr. William A. Fisher, president and treasurer; Dr. Adolphus G. Wippern, vice-president, and Dr. John R. Hoffman, secretary.

Columbus Hospital Opened.—This institution, which is under the direction of the Missionary Sisters of the Sacred Heart, was dedicated with appropriate ceremony, February 26, by Archbishop Quigley. The staff of the hospital includes Drs. John B. Murphy, Frank Byrnes, Gustav Fütterer, Julius H. Hoelscher, Heman H. Brown, Thomas S. Crowe, Willis D. Storer, Antoine Biankini, William P. Verity, Randolph Brunson, A. Cosmas Garvy, Harold N. Moyer and David Lieberthal.

Deaths of the Week.—Although 7 more deaths were reported during the week than during the week of the 18th, the Department of Health considers that indications of the state of Chicago's health are more reassuring than at any time since last November. During the last four weeks there have been 2,351 deaths from all causes reported, an annual mortality of 15.40 per 1,000. During the corresponding four weeks last year there were 2,522 deaths—or 171 more—reported and the annual mortality rate was 17.46, or 11.7 per cent. higher. One of the principal causes of this reduction is the lesser prevalence and fatality of pneumonia this winter than last. In the first 56 days of last year there were 1,151 deaths from pneumonia; during the corresponding period this year there have been 1,019, or 132 fewer. On the other hand, there have been 39 more deaths from consumption, and the ratio of consumption deaths (551) to deaths from all causes (4,838) has increased since the first of the year to 11.3 per cent. as compared with 10.4 per cent. last year.

KANSAS.

Contagious Diseases.—During January there were reported 55 cases of diphtheria, with 10 deaths; 149 cases of scarlet fever, with 9 deaths; 713 cases of smallpox, with 2 deaths, and 13 cases of typhoid fever, with 3 deaths.

Kesner Sentenced.—Dr. Christopher C. Kesner, Le Roy, who has been making a strong fight for reversal of the decision against him, has been found guilty of murder in the second degree for the death of a woman after an alleged criminal operation, and has been sentenced to hard labor in the penitentiary for a term not less than three years, nor more than five years.

Legislature Accepts Land for Clinical School.—Both houses of the legislature have recommended the bill accepting the gift of land from Dr. Simeon B. Bell, Rosedale, valued at $50,000, on which is to be erected a hospital to be used as the clinical department of the medical school of the state university. Dr. Bell's offer also includes $25,000 for the erection and equipment of the hospital, and, in addition, he will endow 20 beds in the institution.

MARYLAND.

Baltimore.

Influenza Prevalent.—La grippe is prevailing here and a number of deaths were reported as due to it last week.

Bust of Remsen Presented.—Mr. J. Maxwell Miller, Rhinehart scholar of the Peabody Institute, has modeled a bust in plaster of President Ira Remsen and presented it to the Hopkins University.

The Faculty Meeting.—The one hundred and seventh annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Baltimore, April 25, 26 and 27. Dr. William Osler will deliver the annual oration and the meeting will be a farewell of the Maryland profession to him.

Anti-Spitting Crusade.—The crusade against spitters has begun. The law prohibits spitting on sidewalks, in public squares, public buildings, railway cars, depots, lodging houses, theaters, stores, factories, hotels, etc. A copy of the ordinance is given to each policeman and notices are displayed all over the city.

Osler Soon to Go.—Dr. William Osler will sail for Europe about May 17. The name of his successor has not yet been announced. The trustees and the faculty of the Johns Hopkins University have engaged Hans Schuler to make a marble bust of Dr. Osler for the university. The plaster cast has been finished and the marble is now on its way from Italy. The bust is a present from a number of Dr. Osler's friends.

Tuberculosis Dispensary Opened.—At the opening of the Phipps Tuberculosis Dispensary, February 21, Mrs. Henry Phipps of Pittsburg was present and took great interest in the proceedings. Mr. Phipps has given an additional $5,000 to the work. Mr. Victor G. Bloede has donated a sufficient sum to pay the expenses of a trained nurse. The building is two stories high, of brick, and is located on the Johns Hopkins Hospital grounds.

The Crisis of Two-Score.—Dr. William Osler was the speaker at the commemoration day exercises of John Hopkins University, February 22. He also received the degree of LL.D. from the university. In conferring the degree, President Ira Remsen said: "You confer an honor on the university in accepting it." It was truly Osler day, this being his farewell public address at the university before leaving for Oxford University. The address was very notable in many respects. A full abstract is printed in this issue of THE JOURNAL.

Personal.—At the annual meeting of the Alumni Association of the Johns Hopkins University, Dr. Henry Herbert Donaldson, Chicago, was elected president.——Dr. James D. Iglehart was elected president of the St. Johns College (Annapolis) Alumni Association February 22.——Dr. George C. Wegefarth is at Hot Springs, Ark.——Dr. Samuel Taylor Darling, pathologist at the City Hospital and connected with its Pasteur Institute, who was married, February 18, in New York, has received a government position at Panama, and left here, February 21, for his new post of duty.

MASSACHUSETTS.

Anti-Tuberculosis Meeting.—The Anti-Tuberculosis Association of Cambridge held a meeting, February 22, at which Dr. Eugene A. Darling described the work of the association, and Dr. Charles S. Millet of the Millet Sanitarium, East Bridgewater, spoke on "The Home Treatment of Tuberculosis."

Tuberculosis Exposition.—As a result of the activity of the Boston Association for the Relief and Control of Tuberculosis a resolution is being urged on the legislature calling for an appropriation of $2,000 to be expended by the State Board of Health "for an exhibition of means and methods of treating and preventing tuberculosis." The purpose is to have this exhibit sent to various cities and towns of the state for the instruction of the people, in the same way that the less complete outfit of the association has already been used.

Why Osteopaths Urge Bill.—Urgent efforts are being made this year by the osteopaths of Massachusetts to secure the passage of a bill which shall require all practitioners of medicine to pass an examination before the State Board of Registration in Medicine. Their approval of such a bill is explained by the condition that the 60 osteopaths now practicing in Massachusetts shall, on recommendation of the Massachusetts Osteopathic Society, be admitted to practice without examination, having all the privileges of registered physicians, except

the practice of major surgery and the right to administer medicines internally.

Convalescent Home Needs Support.—The annual meeting of the managers of the Convalescent Home of the Children's Hospital, Boston, urged the need of greater support. Only about $3,000 was contributed for this work during 1904, and with this 245 children were cared for, averaging 29 daily, while in 1903, 277 were treated, averaging 13 per day. The difference is due to the development of the "shack" treatment for tuberculous joints, many of which patients stayed several months. Here, in cool, fresh air, warmed only slightly by two stoves, children have steadily gained, and have not complained at all of a temperature only 18 above zero.

NEW YORK.

Scarlet Fever Not Epidemic at New Rochelle.—It is denied that scarlet fever has been epidemic in New Rochelle. There are only six cases in a city with a population of more than 20,000.

The Health of the State.—State Health Commissioner Lewis, in his annual report shows an increase in deaths from pneumonia in 1904, and that typhoid fever was prevalent in many small towns. He repeats the request that money be used in investigating the water supply of country districts. It is desired especially to purify Lake George and Lake Champlain from the discharge of pulp mills. Beneficial results have been obtained from the use of toxin from the state laboratory, but a new laboratory building is needed. There were 141,564 deaths from all causes in the state. In the last twenty years the average of deaths has grown from 100,000 to 130,000, the number in 1904 being above the average. The percentage in deaths from zymotic diseases, as compared with other causes of death, shows an improvement. From 1885 to 1889 it increased from 20.6 to 22.7 per cent., while in 1904 the percentage was 12.3. Epidemic cerebrospinal meningitis and measles alone have shown an increase in mortality. For several years Watertown and Niagara Falls have shown a needlessly high death-rate from typhoid fever. Purification of the water supply in those places is a necessity. The many summer resorts ought to be subjected to a careful inquiry as to their sources of water supply. Pneumonia caused 13,500 deaths in 1904, as compared to 10,250 the year preceding. There were more than 14,000 deaths from consumption. Smallpox caused only 13 deaths, which can be accounted for by general vaccination. Many persons, by means of the state laboratory, were protected from tetanus.

Buffalo.

Alumni Dine.—The fifth annual dinner of the Western New York Alumni of the University of Pennsylvania was held recently. Dr. W. W. Zimmer of Rochester, presided. Among the speakers were Dr. George A. Piersol, professor of anatomy of the University of Pennsylvania. It was said that the increase of attendance in the medical department over 1903 was 50 per cent., and 80 to 90 per cent. over the attendance of two years ago.

New York City.

Made Honorary Member.—Prof. Dr. Wilhelm Waldeyer of Berlin was made an honorary member of the Society of Medical Jurisprudence at its meeting, February 20.

Census Favored.—The alderman's finance committee has reported favorably on the health commissioner's request for an appropriation to meet the expenses of taking a census of the congested districts of the city. One of the objects of this census is to obtain data as to the contributory effects of crowded conditions of living on the prevalence of pneumonia, consumption and cerebrospinal meningitis.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending February 18, 339 cases of tuberculosis, with 171 deaths; 272 cases of diphtheria, with 47 deaths; 225 cases of scarlet fever, with 20 deaths; 209 cases of measles, with 8 deaths; 23 cases of typhoid fever, with 4 deaths; 1 fatal case of smallpox; 132 cases of chicken-pox and 40 deaths from cerebrospinal meningitis.

New Cancer Hospital.—Prominent medical men are endeavoring to establish a hospital where cancer may be scientifically treated and inoperable cases cared for. At a hearing before three of the commissioners of the State Board of Charities no objections were offered to incorporating such an institution, provided there was money enough secured for its support for one year. The hospital will be incorporated as the Fairhaven Sanitarium.

Hospitals Overcrowded.—Bellevue Hospital is so overcrowded that appeals for the reception of convalescent patients have been made to other hospitals. Both the Metropolitan and City hospitals on Blackwell's Island are so crowded that authorities at Bellevue were informed no more patients could be transferred to those hospitals. From all hospitals the same report is made. There have never been so many persons suffering from lung diseases. The death rate at Bellevue now averages from 15 to 20 daily. Normally, Bellevue has accommodations for 800 patients, but at present there are over 1,000 in the institution.

Work of the Health Department.—At a special meeting of the advisory board of this department the use of cuspidors in the subway and on the elevated roads as a sanitary precaution was discussed. A form of cuspidor suitable for this purpose was presented and approved. It is probable that the subway and elevated roads will be requested to provide a sufficient number of these so that the public will have no excuse for spitting on the floors.——A committee was appointed to devise a plan for thoroughly cleaning the cars and platforms of the elevated and subway.——Reports in regard to the amount of oxygen in the air of the subway were received, and the condition of the air was said to be satisfactory.——Approval was expressed of the bill now before congress relating to soiled paper money, as it affected public health. Dr. Darlington had appeared before a committee in Washington, to whom he submitted a report of experiments made by Dr. William H. Park to determine the influence of coin and paper money on the life of bacteria. The results of these experiments indicate that metallic substances in coins when brought in contact with bacteria, through the solvent action of moisture, are deleterious, while in paper there are no such substances, the gradual death of bacteria being due to the effect of drying. Dirty pennies averaged 26 living bacteria apiece; dimes, 40; moderately clean bills, 1,250, and soiled bills, 73,000.——The Board of Health, in its endeavor to provide a pure milk supply has had the support of the *American Dairyman*. The last issue of this publication announces that a public lecture will be delivered on "Our Foster Mother on the Farm, or Milk from the Farm to the Table."

OHIO.

District Physicians to Inspect Schools.—For the remainder of the year medical inspection of schools will be performed by the district physicians. They will be subject to call from the principals of the schools in the districts in which they reside to investigate all cases of illness which are thought "suspicious," and will immediately advise principals and parents as to what is necessary. Their inspection will include not only such diseases as diphtheria, scarlet fever, and allied affections, but communicable skin and scalp diseases as well. This step is but preliminary, it is hoped, to a system of thorough medical inspection to be put in force after the present year.

Canton Society Officers.—At the annual meeting of the Canton Medical Society the following officers were elected: President, Dr. Edgar J. March; vice-president, Dr. George A. Kelley; treasurer, Dr. F. D. Hinden; recording secretary, Dr. Clarence F. Schiltz, and corresponding secretary, Dr. Leander D. Stoner. The annual banquet of the society was held January 27. The annual address was delivered by Dr. Brooks F. Beebe of Cincinnati, on "Rationale of Suggestion," and toasts were responded to by Dr. Edwin Ricketts, Cincinnati, "The Doctor's Wife"; Dr. Brooks F. Beebe, Cincinnati, "The Doctor's Fireside"; Dr. Robert A. Biechele, "The Canton Doctor," and Dr. C. J. Aldrich, Cincinnati, "Medicine of the Future."

Personal.—Dr. Joseph A. Hall, Cincinnati, captain and assistant surgeon, O. N. G., has been appointed to the personal military staff of the governor.——Dr. W. H. Pritchard has been elected superintendent of the Ohio Hospital for Epileptics, Gallipolis, to fill unexpired term of Dr. A. P. Ohlmacher, resigned.——Dr. Samuel S. Thorn, Toledo, chief surgeon of the Clover Leaf system, has resigned, but will remain with the road as local surgeon at Toledo.——Dr. Minor M. Jacobs has been appointed a member of the Hamilton Board of Health, vice Dr. Henry Mallory, deceased.——Dr. Henry D. Hinckley has been elected dean of the Cincinnati Polyclinic and Postgraduate Medical School.——Dr. Irving C. Rankin, Akron, is seriously ill with septicemia.——Dr. Herbert M. Platter, Columbus, has been appointed medical inspector.

PENNSYLVANIA.

Physicians Injured.—Dr. Harvard H. Drake, Norristown, narrowly escaped severe injury by the collision of his carriage

with a trolley car. He was thrown from the carriage, but fortunately escaped with slight injury.——Dr. William McKenzie, Conshohocken, fell on the ice and sustained a fracture of the femur.

Philadelphia.

Bequest.—By the will of Ellen K. Mitchell, Pennsylvania Hospital receives $5,000 for the establishment of a free bed.

Personal.—Dr. John H. Musser addressed the Rochester Academy of Medicine, Rochester, N. Y., February 15, and on the same day held a clinic in the City Hospital.

Medical Society Reception.—The J. C. Wilson Medical Society was addressed, February 24, by Prof. Albert H. Smyth, on "Benjamin Franklin and His Medical Friends." After the lecture Professor Smyth was entertained at an informal reception by the society.

Dr. McClellan Lectures.—Dr. George McClellan delivered a lecture, February 21, before the students of Jefferson Medical College in the college building, under the auspices of the E. P. Davis Obstetrical Society. His lecture was illustrated and entitled "The Anatomy of the Pelvis with Relation to the Mechanism of Labor." Dr. McClellan was tendered a reception and banquet by the society immediately after the lecture.

Health Report.—The deaths reported for the week ended February 25 aggregated 579, as compared with 599 last week and 643 for the corresponding week of last year. The mortality from pneumonia continues high, 113 deaths being attributed to that disease. This is a decrease, however, of 21 from those of last week. The principal causes of death were as follows: Typhoid fever, 10; diphtheria, 15; influenza, 13; consumption, 51; cancer, 23; paralysis, 38; heart disease, 67; pneumonia, 113; enteritis, 20, and Bright's disease, 49. There were 198 cases of contagious disease with 25 deaths, as compared with 224 cases and 30 deaths for the preceding week.

TEXAS.

Declared Insane.—Dr. R. H. Watkins, Floresville, was adjudged insane, February 10, and ordered to be placed in restraint.

Hospital Annex Dedicated.—The new annex to St. Joseph's Infirmary, Houston, erected at a cost of $45,000, and intended to be used as a sanatorium, was formally dedicated, February 14.

Physicians Injured.—Dr. Henry S. Van Cleave, Nash, was thrown from his horse and seriously injured February 8. He is now improving rapidly.——Dr. Curvier Lipscomb, Denton, slipped and fell, February 8, breaking his right hip.

UTAH.

Germ Day in Utah.—A West Virginia journal characterizes as "a holiday in honor of germs" the General Health Day, the first Monday in October, which is set apart in Utah as a holiday for house cleaning.

Society Election.—At the annual meeting of the Weber County Medical Society the following officers were elected: President, Dr. Harry B. Forbes; vice-president, Dr. Chester E. Coulter; secretary, Dr. Amasa S. Condon; treasurer, Dr. Haymond J. Powers, and delegates to the Utah State Medical Association, Drs. Amasa S. Condon and Edward M. Conroy, all of Ogden.

Personal.—Dr. Eugene W. Whitney has succeeded Dr. Harry N. Mayo as physician of Salt Lake County.——Dr. Gilbert B. Pfoutz, Salt Lake City, has been appointed oculist to the Salt Lake Route.——Dr. William B. Parkinson, Logan, has been appointed physician of Cache County.——Dr. Frost C. Buchtel, Vernal, starts for Europe early this month.——Royal H. Milleron, Salt Lake City, a student at Rush Medical College, Chicago, shot and killed himself at Provo, while despondent.

Hospital Opened.—The Groves Latter-Day Saints' Hospital, Salt Lake City, was opened to receive patients January 9. The staff is as follows: Drs. Joseph S. Richards, Samuel C. Baldwin, Charles F. Wilcox, Charles G. Plummer, Stephen L. Richards, Samuel H. Allen, William F. Beer, Edwin E. Wilcox, Walter S. Ellerbeck, Fred Stauffer, Leslie W. Snow, Chauncey M. Benedict, Mark C. Myers, Franklin H. Raley, Herbert C. Deane, W. Tenny Cannon, William M. Brown, Salathiel Ewing, Thomas G. Odell, R. T. Richards, C. F. Wilcox and E. Gowans.

VIRGINIA.

Physician's Slayer Sentenced.—Charles R. Fishburn, Roanoke, who shot and killed Dr. Charles E. Lefew, Oct. 30, 1904, was found guilty of manslaughter, February 4, and sentenced to five years' imprisonment in the penitentiary.

Personal.—Dr. H. Stuart MacLean, Richmond, has been appointed chief surgeon of the Virginia Passenger and Power Company.——Dr. Francis M. Morgan, Berkley, while making a professional call, February 5, slipped and fell, breaking his clavicle.

Verdict for Physician.—In the case of James Scott against Dr. B. Robert White, Strasburg, in which $1,000 damages was claimed for malpractice in that the defendant was alleged to have neglected to treat the plaintiff for a diseased eye while he was quarantined on account of smallpox, the jury brought in a verdict for the defendant, who contended that he had not been retained by the plaintiff, but had acted only as a health officer.

Home for Medical Library.—The Norfolk Medical Society has entered into an arrangement with the Norfolk Public Library, by which it is enabled to use this building for its books and periodicals. These will, however, only be given out to members of the society and their friends through special cards, as it is not deemed advisable to allow the public free access to medical books. Beside its old books the Norfolk Medical Society has been able to obtain the nucleus of a good reference library, which it expects gradually to increase.

Lectures on Hygiene for School Children.—The Norfolk School Board has obtained the services of eleven physicians of the town to give a series of lectures on hygiene in the public schools. These are to supplement the school course, and are arranged to draw the attention of the pupils more especially to the civic side of the subject. The first of these lectures was given the white schools on Friday, January 6, but they will be repeated later in the colored schools. This plan originated with a member of the board, Dr. Lawrence T. Royster, who, with the cordial support of his brother physicians, hopes by this education eventually to improve the health of the community. Drs. Herbert Old, Charles R. Grandy, Edward T. Hargrave, R. Paul Jones, Rufus S. Kight, B. L. Taliaferro, Stanley H. Graves, J. Judd Miller, Frank H. Hancock, Philip St. L. Moncure, and Lawrence T. Royster have been selected to deliver the lectures.

WISCONSIN.

Medical Library Loaned.—Dr. Lyman J. Rhoades, Fond du Lac, has loaned to the Stevens Point Public Library the medical library of his father-in-law, the late Dr. John Phillips of that city, to be used as a reference library only.

Fire Losses.—The fire at the Milwaukee County Hospital, January 29, caused a loss of $10,000, but no casualties occurred.——Fire in the house of Dr. Philip R. Fox, Madison, February 13, did damage amounting to about $1,500.

Personal.—Dr. William G. Nicholson, Green Bay, sailed for Europe, February 18.——Dr. Richard C. Buchanan, Green Bay, has been re-elected city physician.——Dr. Charles D. Kelley, Milton Junction, has been adjudged insane and committed to the state hospital at Mendota.——Dr. Byron N. Caples, Waukesha, has been elected president of the board of directors of the Waukesha Springs Sanitarium.——Dr. William F. Whyte, Watertown, has been re-elected president of the State Board of Health.

Waukesha County Society Election.—At the annual meeting of the Waukesha County Medical Society the following officers were elected: Dr. Henry G. B. Nixon, Hartland, president; Dr. Benjamin U. Jacob, Waukesha; vice-president; Dr. Maybelle M. Park, Waukesha, secretary; Dr. William B. Campbell, Menomonee Falls, treasurer; Dr. Thomas Tomelty, Big Bend, censor, and Drs. Albert J. Hodgson, Waukesha, Michael R. Wilkinson, Oconomowoc, and Laurel E. Youmans, Mukwonago, committee on health and legislation.

GENERAL.

To Aid Amalgamation in New York.—At a meeting of the council of the New York State Medical Association, February 25, the following resolution was passed unanimously: "WHEREAS, The council of the New York State Medical Association favors union with the Medical Society of the State of New York, on a plan proposed by the Joint Committee of Conference, which was prevented by legal complications, be it *Resolved*, That the president of the New York State Medical Association is hereby empowered to employ associate counsel who, with the counsel of the association, shall investigate and report on all legal questions relating to the vested rights of the members, the by-laws, and the calling and the holding of meetings."

CANADA.

Winnipeg News.—The epidemic of typhoid fever is practically over in Winnipeg. The city council will appoint a bacteriologist as assistant to the health officer. The health department has sent circulars to the physicians of Winnipeg calling attention to the report of Prof. E. O. Jordan of Chicago, who has been investigating the causes of the epidemic of typhoid through which Winnipeg has been passing for many months. The report appeared in THE JOURNAL, February 18, page 563.

Montreal General Hospital Report.—At the eighty-second annual meeting of the governors of the Montreal General Hospital, a considerable decrease in the annual income was reported. The 1904 income was $83,589, $7,605 less than in 1903. The total number of patients in the wards during 1904 was 3,144, as against 3,066 during 1903. In the out-door departments the total number treated amounted to 38,922, as against 35,984 for the previous year. Of the total number of patients admitted during the year—3,156—2,893 were discharged, 251 died, and there remained in the institution at the end of the year 201 patients. The percentage mortality was 7.98, or 4.9 exclusive of those dying within three days of admission. The average cost per patient per day was $1.38, as against $1.56 in 1903. Dr. F. G. Finley was re-elected secretary.

Canadian Government Asked to Combat Tuberculosis.—A resolution submitted to the federal parliament last week declares that the government should take steps to combat the spread of tuberculosis. Mr. Perley, who introduced the resolution, stated that out of the 60,540 people who died in 1903 in the provinces of Ontario and Quebec, 2,943 deaths were from tuberculosis in Quebec, and 2,723 in Ontario, as compared with 2,017 and 1,938 respectively of all other contagious diseases. In the entire Dominion of Canada, the number of deaths last year amounted to about 8,000. Mr. Perley considered that if the government would co-operate with the Canadian Association for the Prevention of Tuberculosis much could be done in staying the ravages of the disease. All of the medical men of the house of commons strongly endorsed the resolution, and the minister of agriculture, under whose charge are all matters of public health, also supported it. The debate on the resolution will have the effect of a larger governmental grant to the Association for the Prevention of Tuberculosis.

FOREIGN.

From the Seat of War.—Our Russian exchanges for February give the names of several physicians who were among the 15,000 wounded in Port Arthur at the time of the surrender.

Behring's Method of Immunizing Cattle Against Tuberculosis.—Professor Mazzini is in charge of experiments on a large scale undertaken in Italy to test the value of Behring's method of immunization.

Subsidence of Plague in Russia.—The prophylactic measures instituted in the Ural district to prevent the spread of the plague have been successful. They have now been suspended, as there is no further need for them.

Antimalaria Education.—The Italian government has issued a pamphlet entitled "Popular Instruction in Protection Against Malaria." It has been sent to all the public school teachers to aid them in instructing the young in prophylactic measures.

Lowered Death Rate in City of Mexico.—Owing to the improved sanitation, better drainage and inspection of foodstuffs, the death rate in the City of Mexico, during 1904, was 41 per 1,000, an improvement over former years, when it frequently rose to 49 per 1,000.

Epidemic of Cerebrospinal Meningitis in Germany.—Our German exchanges state that this disease is extremely prevalent in upper Silesia. In the Königshütte district alone there have been 18 cases among adults and 74 in children, with a mortality of 4 adults and 32 children.

Personal.—The University of Halle, Germany, has conferred on Willy Merck, Ph.D., member of the old house of E. Merck, Darmstadt, the honorary degree of doctor of medicine "in recognition of numerous meritorious contributions looking to the advancement of the therapeutic side of medicine."

Study of Anemia in Porto Rico.—A bill has been introduced in the Porto Rico legislature to appropriate $20,000 to continue the study of anemia. In accord with its provisions, tents would be erected all over the island, and physicians conversant with the disease would commence work at once. It is estimated that 50 per cent. of the inhabitants of the rural regions of the island suffer from this parasitic disease.

Plague in Aden.—Many new cases of plague have been reported in Aden and, according to the *Public Health Reports*, the disease is becoming epidemic. Owing to the apathy of the populace, the sanitary authorities are meeting with difficulties in their efforts to combat the disease. For the guidance of the plague committees, directions are being published for the care of the sick and for cleansing and disinfection of infected premises.

Massage by the Blind.—Massage is cheap and within the means of all classes in Japan. The blind, protected by the government, are self-supporting and contented with their lot and have a practical monopoly over massage, says the *Medical News*. This condition has existed for centuries. In four countries—Russia, Belgium, England and Germany—there have been well organized and successful attempts to teach selected blind people massage.

Centennials of Russian Universities.—There was no official celebration, but compendious reports were issued in January to signalize the fact that 150 years had elapsed since the founding of the University of Moscow and 100 years since the founding of the Kharkov University. The faculty at Moscow includes 72 regular professors, of whom 25 belong to the medical department, the total force of instructors numbering 224, and at Kharkov 144.

Visiting Nurses for Rural Districts.—Baden and Bavaria have an association which supplies trained nurses for country districts. The Bavarian association is a branch of the Red Cross. It has 16 of these nurses, and during 1904 they took care of 210 patients, including 33 parturients. Nowhere are the services of a trained nurse so appreciated by the physician as in the rural environment, and the nurses are required to insist on medical attendance in every case they undertake.

Endemic Affections in Submarine Boats.—The widow of a French naval officer appealed to the government for a pension, asserting that her husband's two years of duty on submarine boats had been the cause of his death. Her petition stated that the conditions of life on a submarine boat entail endemic affections, and her husband succumbed to rheumatic endocarditis which she attributed to this cause. The courts decided in favor of the assumption of endemic affections on submarine boats, and awarded her the desired pension.

Association of Physician with Layman Illegal in France.—Dr. Klein, a French physician, entered into a contract with a "so-called chemist," named Crotte, to establish an institution for the treatment of tuberculosis. Klein paid $10,000, but soon wished to withdraw from the contract, claiming that he had been deceived, and demanded his money back. The decision of the court was to the effect that as a contract between a physician and a layman for the exercise of medicine in common is unlawful, there had been no valid contract, and consequently the physician was entitled to his money.

The Heidelberg Cancer Institute.—The organization of the official cancer research committee at Heidelberg was mentioned recently in these columns. About $125,000 has been subscribed for a cancer institute, and Czerny, the chairman of the committee, has increased this amount by $25,000 from his private purse. The institute is to be lavishly equipped; it is arranged for 47 beds, with a laboratory, etc., for all kinds of research work. All scientists who wish to study the subject of cancer with the most approved means of investigation will be welcome. For the present the institute is to form part of the surgical clinic, but the faculty is to decide, at five-year intervals, whether this connection with the clinic corresponds to the best thought of the day. In the collective research throughout the state (Baden), special attention is to be paid to the study of cases of cancer occurring in groups at certain points.

A Dettweiler Institution.—To honor the memory and the works of the late Geheimrath Dr. Peter Dettweiler, the founder of the Falkenstein Sanatorium and of the first people's sanatorium at Ruppertshain, it has been decided, by his friends, admirers, patients and pupils to establish an institution bearing his name, which shall be a home for physicians who have served in sanatoria for consumptives, and who have become invalidated by disease, accident or old age. For the collection of funds and the final arrangements a committee has been formed under the patronage of the Princess Friedrich Carl of Hesse. This committee is composed of many of the foremost men and women of the German empire. Of the medical men

who have signed the appeal for funds, we read such names as Besold, the successor to Dettweiler, Professors Curschmann of Leipsic, Flügge of Breslau, B. Fränkel, von Leyden and Pannwitz of Berlin, General Dr. von Leuthold, physician to the Emperor, Schmidt of Frankfort, etc. Contributions are to be addressed to Grunelius & Co., bankers, 16 Gr. Gallus-Strasse, Frankfort on the Main.

Settlement of Sick Benefit Society Troubles.—The Medical Court of Honor for the city and district of Leipsic, Germany, has recently imposed a comparatively heavy pecuniary penalty on 45 local physicians who were accused of conduct conflicting with medical ethics. In the long contest between the organized profession and the sickness insurance societies (*Krankenkassen*), to obtain more equitable remuneration, these physicians sided against the medical officers of the societies. They entered the service of the *Sanitätsdienst*, a new society, which was organized to outwit the former medical officers by some legal quibble. An appeal to the higher court of honor resulted in a confirmation of the verdict, except that the fines were reduced to $75 and $150, with costs. The details of the long struggle between the *Krankenkassen* and their medical officers at various points in Germany are given in detail, week by week, in the *Münchener med. Wochft.* It states that Lübeck has been added to the constantly growing list of cities where the societies and their medical officers have come to a satisfactory agreement without any dispute.

Antimalarial Campaign in India.—The *British Medical Journal* states that a vigorous campaign has been instituted against malaria in the Madras presidency. A few localities were selected where certain experimental operations having for their object the suppression of malaria, could be carried out, and local bodies concerned were invited to allot funds for the purpose. The scheme of the operations comprised: (1) The filling up, or draining, of pools, or the killing of mosquito-larvæ by kerosene oil; (2) the treatment of the inhabitants with quinin, and microscopic observations of the result of the treatment, and (3) the undertaking of drainage works which would permanently relieve subsoil and surface water obstacles. For the carrying out of the experiments in the places selected, the sanitary commissioner, Lieutenant-Colonel King, requested that the services of a commissioned medical officer, as well as of an engineer subordinate, might be placed at his disposal for a period of six months. It is pointed out that the scheme can be applied only gradually, as funds permit, but some operations should be prosecuted every year, and suitable provision made in the budget for that purpose.

The Reversed Tuberculin Test.—Mérieux of Lyons has devised a new tuberculin test by reversing the usual technic. Tuberculin injected into a tuberculous person causes a specific thermic reaction. A similar specific thermic reaction is observed in tuberculous guinea-pigs after injection of organic fluid from a tuberculous human being. In his communication on the subject, in the *Lyon Médical*, CII, No. 13, 1904, he relates his experiences with 18 tuberculous guinea-pigs inoculated with blood serum, urine, serous fluid from a blister or expectorated blood all taken from patients with clinical tuberculosis. The classic thermic reaction was always positive in the cases of known clinical tuberculosis. On the other hand, there was no reaction in the absence of clinical tuberculosis. In case of dubious results, the test was repeated with larger amounts of the human fluid; from .2 to 2 c.c. were used for the tests. He is now studying this "indirect tuberculin reaction" in cases of surgical tuberculosis, meningitis, etc. He is inclined to believe that this specific reaction of the toxin secreted in the diseased organism might be utilized in the majority of microbian diseases accompanied by sufficient production of toxins. He suggests that the method might prove useful for the study of the toxicity of a certain microbe for a given organism.

LONDON LETTER.

Blood-Sucking Insects and Tropical Diseases.

The director of the natural history department of the British Museum has issued a pamphlet on "Bloodsucking Flies," a copy of which has been sent to every army surgeon with the object of assisting those willing to help the museum to obtain specimens. It is thought that physicians and others engaged in improving the sanitation of tropical countries should have the means of determining correctly the names of blood-sucking species with which they may come in contact, and that a well-preserved collection of modern specimens should be available in London for comparison. The British Museum has already dealt with mosquitoes and tsetse flies, on which it has published splendidly illustrated monographs, and it is now proposed to publish on similar lines, a further series of monographs on other blood-sucking insects. The material at present at its disposal is insufficient, and it is, therefore, hoped that all physicians and naturalists residing in British colonies or in any part of the tropics will make special endeavors to obtain specimens and to send them to the director, British Museum (Natural History), London, with notes on the names, habits and distribution of the insects. When a collection is dispatched a separate letter of advice stating the fact should always be sent. The expense of sending collections to the museum will be refunded. As soon as efficient material has been obtained the preparation of the first monograph will be commenced.

The Advisory Board of the Army Medical Service.

A subcommittee, appointed to advise on the preparation and application of antityphoid and other sera, has presented an important report. The subcommittee expresses the opinion that as a general principle it is desirable that therapeutic agents of any kind which may be obtained from ordinary commercial sources should not be manufactured by the Army Medical School or by its professors. At the present time, the sera of admitted therapeutic value, e. g., diphtheria antitoxin, can be procured from several reputable firms, and there is no reason to suppose that their direct preparation by the Army Medical School would result in economy to the state or in the production of a better article, while much valuable time, which would be better devoted to teaching or to research, would be lost to the professors. On the question of the preparation and application of antityphoid fluid the subcommittee finds itself in some difficulty, as the efficacy of this remedy is still in dispute. For the purpose of dealing with the statistics at present available the subcommittee asked Lieutenant-Colonel Bruce to prepare a paper which forms an appendix to the report. His conclusion is that the general statistics available up to the present are not sufficiently extensive nor exact to permit of any conclusions being drawn as to Wright's antityphoid inoculation.

Fatal Case of Plague in the Mersey.

A case of plague is reported in the Mersey on the steamship *Crewe Hall*, which arrived from Rangoon, January 30. The captain reported "all well," but on February 1 a customs officer noticed a lascar sick in his bunk and apparently dying. On inquiry he was informed that the man had had a severe cold for the previous week. The port health officer was sent for, but when he arrived the man was dead. He found that the chief steward had treated the lascar for high fever, which he thought was due to malaria, but he mentioned that there was a painful swelling in the groin. The lascar was laid out in the native sailor's forecastle. On examination, all that could be discovered was a large bubo in the left femoral region. As there was a suspicion of plague it was decided to act as if that was the cause of death. The body was removed, and all the effects of the native crew were disinfected. The "contacts," who numbered 15, were bathed and dressed in disinfected clothing and removed to the port sanitary hospital for isolation. The port rat-catchers were sent for, but could find no dead or sick rats. They set traps and caught 11 rats, which were forwarded to Professor Boyce for bacteriologic examination. February 2, further disinfection of all suspected quarters of the ship was carried out. The cargo was discharged under strict supervision, and a careful watch for dead rats was kept. The holds were fumigated in order to destroy all rats. On February 2, a necropsy was performed on the body of the man. The skin over the bubo was markedly discolored. The bubo was very large and hemorrhagic on section, with much periglandular inflammation. There was also evidence of a septicemic condition, with a considerable amount of pneumonia. Microscopic examination of the gland juice showed numerous plague bacilli. The source of infection could not be ascertained, but the medical authorities think there is little danger of further infection.

Sterilizing Water in the Field.

A number of devices for the sterilization of drinking water for troops in the field were exhibited at Millbank Barracks. Three main methods were represented depending respectively on chemical means, on filtration, and on heat. Of chemical processes there were 6. The first, that of Schumburg, consisted of a bromin solution (bromin, potassium bromid, and water) in glass capsules containing 2 c.c. each. A capsule is broken into a liter of water, which, after a period varying from ten to thirty minutes, is treated with a mixture of sodium sulphite and carbonate which neutralizes the bromin and removes its

odor in about two minutes. Experiments show, however, that the water is liable to have a stale taste, and the necessity of carrying about in the field a number of fragile capsules containing liquid is an obvious objection to this method. The second process, that of Vallard and Georges, depends on the action of iodin. Three tablets are used containing respectively iodate of soda, iodid of potassium, and a blue coloring matter; tartaric acid with a red coloring matter, and hyposulphite of soda. Sterilization requires ten minutes, and when complete the water has no smell. In the third process (Nessfield's) the water is first treated with bleaching power and bicarbonate of soda, and after sterilization is complete, in about ten minutes, sodium sulphite is added to render it free of chlorin and tasteless; but it seems to be difficult to do this perfectly. The fourth process consists in the addition of about 15 gr. of bisulphate of soda to each pint of water. It was tried in South Africa, but the men objected to the taste imparted to the water; this, however, can be removed by the addition of sodium bicarbonate. A further objection is that the treated water takes up iron from the water bottles. The fifth process is the old one of adding potassium permanganate. The color imparted is not liked by the men. The sixth process consists in the use of copper sulphate or chlorid. The experiments of Dr. George Moore, of the scientific staff of the United States Government, seem to show that a sulphate of copper solution of the strength of 1 in 100,000 kills both typhoid and cholera bacilli in four or five hours. However, experiments made in Great Britain by Rideel and Barnes show that this strength is ineffective, though a 1 in 10,000 kills typhoid bacilli, but not cholera bacilli, and 1 in 1,000 kills both. In the second class of apparatus depending on filtration various forms of the Slack & Brownlow field service filter were on view; also a service water cart fitted with this filter. The other water carts were the Bailey-Denton, with a clarifying filter of charcoal and a Berkefeld filter for sterilizing; and the Lefebvre with a filter of asbestos and charcoal. All the filters had the disadvantage that the rate of flow soon falls off, and if not cleaned and boiled frequently they become worse than useless. Five kinds of appliances in which heat is used for sterilizing were shown. Of these the Lehigh-Canney is merely a device for boiling water rapidly, unprovided with any cooling arrangement. Another shown was the Griffiths machine, in which the water is not boiled, but raised to 175 F., which the inventor claims is more than sufficient to destroy all water-borne pathogenic organisms. It weighs 120 pounds. In the tests it was found to deliver 60 gallons of sterilized water per hour, with a consumption of one and a half pints of oil. The other machines delivered water at a temperature of 20 or 25 lower, but their yield was much smaller.

Cancer Research in the Colonies.

The correspondence relating to cancer research in the colonies has just been published as a parliamentary paper. The dispatches cover the period from May 27, 1903, to Nov. 30, 1904, and there is an appendix containing letters to the Imperial Cancer Research Fund, from the principal medical officers of Lagos and Fiji, respectively. Mr. Chamberlain, when colonial secretary, issued a circular to the governors and high commissioners of all the colonies and protectorates announcing the starting of a fund in Great Britain to promote investigations into the causes, prevention and treatment of cancer, and requesting the officials to whom it was addressed to promote this object by all possible means. In a supplementary circular sent by Mr. Chamberlain's successor, it is pointed out that the facts accumulated up to that time appear to show that cancer is less frequent among aborigines than in civilized races, and that the committee of the Cancer Research Fund desire that the cause of this rarity should be more fully investigated. The greater number of the returns merely state that steps are being taken to carry out the wishes of the committee, but the governor of the Gambia says that so far as the senior medical officer is aware, cancer is unknown among West African natives. According to the acting governor of British Honduras, cancer occurs in that colony, and investigation is promised. Reports from the Leeward Islands, and from Mauritius state that cancer is not so frequent there as in England. It is apparently rare in British Central Africa. A return from Barbadoes gives the total number of deaths from cancer in the five years 1899-1903, as 120 out of 4,196 total deaths. From the Transvaal has been received a return of 9,578 cases of cancer in Europeans and natives in the year 1903. In Ceylon, during 1903, there were 237 cases of malignant disease, of which 222 were carcinoma and 15 sarcoma.

The Chemistry of Yellow Fogs.

Professor Knecht of the Manchester School of Technology has made an interesting investigation on the composition of fogs. In the school huge fans drive the air from the inlets. Before reaching the fans it passes through a filter consisting of 100 galvanized corrugated iron sheets fixed on edge three-fourths of an inch apart. The air meets a fine spray of water, and passing through screens and fans is heated by exhaust steam. The bulk of the impurities are thus removed and fall with the water into two chambers. After the November fog, the matter taken from these chambers was black, as if it consisted of soot, but on drying it became gray, and left on ignition a large amount of ash. It contained only small quantities of hydrocarbons and phenolic constituents. The percentage of ordinary soot was small. During the fog of December 22, more exact analyses were made from the matter filtered out from air passing through the screens at the rate of 300,000 cubic feet per hour, with a flow of water of 240 gallons. The water became black and greasy-looking. It contained a small quantity of black solids in suspension. The filtrate had an acid reaction due chiefly to sulphuric acid, the acidity being equal to 6.2 gr. per gallon. The total solids of the wash water were in the proportion of 91.7 gr. per gallon. They consisted of a considerable quantity of iron in the ferrous and ferric states, ammonia, lime, magnesia, a trace of arsenic, and sulphuric and hydrochloric acids. The iron probably came from the screens, but the other parts of the matter probably from the high chimney near the school, in which the combustion of the coal was far more perfect than in house fires.

The Hospitals of London.

The maintenance of hospitals furnishes a perennial topic to the press. On the one hand, there are the unceasing appeals to the benevolent to come to the rescue of deserving institutions which are heavily in debt, and which, in the absence of further support, must have their activities curtailed. On the other hand, there are constant complaints from physicians that the hospitals are abused by persons who can well afford to pay for medical treatment. Sir Henry Burdett, the well-known authority on hospital management, has contributed to the *Times* an important statistical article on the resources and requirements of the London hospitals. He admits that evidence accumulates every year to prove that the present system of free medical relief is wrong in principle and harmful in practice to the self-respect and thrift instincts of the population. Taking the population of London as 4,600,000 in 1903, he finds by excluding the persons engaged in the various middle class callings who are ineligible for free hospital treatment, that about 50 per cent., or 2,300,000, represent possible hospital patients. Now in 1903 216,000 persons were treated as in-patients and 2,086,000 as out-patients, making a total of 2,300,000, and therefore representing the total of possible patients. By comparing the figures of 1903 with those of ten years previously, it is found that while the population in 1903 was 6 per cent. greater than in 1894, the applicants to hospital was 23 per cent. greater. No wonder that physicians everywhere complain of the competition of the free medical relief given by hospitals. The conclusion follows that the hospital needs of London are more than provided for. Out of the vast army of applicants a vast proportion must be able to pay for treatment. In 1903 the expenditure on the 94 voluntary hospitals (that is excluding dispensaries, poor-law infirmaries and municipal hospitals for the treatment of infectious diseases) amounted to $6,700,000, for which 9,771 beds were maintained for the treatment of 112,000 in-patients; 1,646,000 out-patients were treated. The expenditure on the voluntary hospitals has considerably increased in the last ten years; in 1894 it was only $4,100,000, so that an increase of over 60 per cent. took place in the decade. This increase of expenditure appears to be partly the result of the great efforts put forward to finance the hospitals, of which the most important was the fund established by the king in 1897.

The Sanatorium Treatment of Consumption.

The results of the sanatorium treatment of consumption appear to fall short of the high hopes that were entertained by many when the treatment was first brought prominently before the profession, and of the claims which have been put forward by many of its advocates. The report for 1904, of the Heswall Poor-law Sanatorium, which receives patients from Liverpool and from some adjacent towns, has been presented. Of 38 patients from Liverpool who have left the sanatorium during the two years of its existence 8 have been

lost sight of. The histories of the remaining 30 are as follows: One died of Bright's disease, one is a chronic invalid from a non-tuberculous illness, and two are well enough to work and are believed to be in good health and free from tuberculosis. Of the remaining 26, 8 have died of tuberculosis and the rest are either inmates of the parish hospital, suffering from tuberculosis, or are in failing health from this cause. Thus, out of the 30 only 2 are in good health at the present time. These disappointing results are attributed chiefly to the fact that very few of the patients applied for treatment in the early stage. Of those who did few were able or willing to submit to the restrictions of sanatorium life. On discharge they were obliged to return to their conditions of poverty, bad sanitation, and unsuitable occupation. These conditions may explain the unsatisfactory results, but even in patients in a better position in life, to whom none of these statements apply, similarly unsatisfactory results are often obtained.

Correspondence.

Treatment of Hemoptysis.

LONDON, Jan. 21, 1905.

To the Editor:—In an article entitled "The Control of Internal Hemorrhage by Drugs," Dr. Thomas Luther Coley says: "This group (nitroglycerin and the nitrites) has been recommended for pulmonary hemorrhage. It would seem, however, that the general widening of the blood paths, together with the fact that the heart beats more rapidly under the lowered pressure, would contraindicate its employment. The general widening of the blood paths will frequently increase the caliber of the vessels of the bleeding area."

It is a question whether an increase in the caliber of the vessels of a bleeding area is of any importance in circumstances which provide for a fall of blood-pressure in that area. This, however, applies to hemorrhage from the systemic, not from the pulmonary, circulation. In the latter, it is highly improbable that an increase of caliber ever occurs through the action of the nitrites; for the experiments of Drs. T. C. Brodie and W. E. Dixon seem to show that the pulmonary arterioles are destitute of vasomotor nerves and that, consequently, agents which promote constriction of the systemic arterioles tend to cause pulmonary engorgement. Hence it is to be anticipated that agents which promote dilation of the systemic arterioles will tend to cause pulmonary ischemia.

That the heart beats more rapidly under the action of the nitrites, must, of, course, be admitted. The increased rapidity of the heart in these circumstances may be regarded as a conservative device adapted to maintain the blood-pressure. Yet it is certain that such conservative action is never fully adequate, since, as Lauder Brunton and others have shown, the nitrites always produce a fall of blood-pressure. The use of the nitrites in hemoptysis does not now depend on *à priori* considerations, however well founded. In the *Lancet*, Aug. 20, 1904, p. 522, and Oct. 1, 1904, p. 942, under the head of "The Medical Treatment of Deep-Seated Hemorrhage," and in the same journal, Jan. 21, 1905, under the head of "The Treatment of Hemoptysis," I contributed a series of 9 cases in which 18 attacks of hemoptysis (17 phthisical, 1 mitral), with one exception, had been stopped within three minutes by inhalation of amyl nitrite. In the one exception, the bleeding continued in reduced amount for ten minutes. The dilative action of the drug on the systemic arterioles is evanescent, probably enduring but a few minutes; yet in only one case of the 18 did bleeding recommence within two hours (half an hour) and in nearly half the cases recurrence was absent (leaving out of account the usual continuance of slightly-tinged sputa). Such results I think are better than were to have been anticipated. Two considerations render amyl nitrite peculiarly suited for the treatment of hemoptysis: 1. The drug may be kept ready to hand and may be used immediately by the patient himself in the absence of the medical attendant and nurse, and it can be used as often as may be necessary. Its practically instantaneous effect restores the patient's confidence, since he feels that he has it in his own power to stop the bleeding. This is of importance because there can be no doubt that fright or anxiety tends to cause a rise of blood-pressure (probably through increasing peripheral vasoconstriction), and so to reinduce hemoptysis. 2. The drug has no influence in suppressing cough. It is the influx of blood to the ulcerated and septic lung tissue, not the efflux of blood from the air-passages, which is checked. Hence the intrapulmonary effusion is rapidly got rid of. In none of the nine cases was there the least subsequent additional rise in the daily temperature range, or other sign of pneumonia. This is in distinct contrast with my experience of cases of hemoptysis treated by morphia hypodermically.

FRANCIS HARE, M.D.

Marriages.

CLARA A. BRUCE, M.D., to John F. Rusz, both of Norwood, Cincinnati, February 14.

CHARLES W. BRASFIELD, M.D., to Miss Maggie Braswell, both of Sweetwater, Ala., January 25.

FRANK ELIOT STETSON, M.D., New Bedford, Mass., to Miss Sigrid Moller of New York City.

ISAAC E. GREEN, M.D., to Miss Margaret Williamson Brickell, both of Weldon, N. C., February 16.

PATRICK K. WORTHAM, M.D., Waco, Texas, to Mrs. E. A. Howard of Eddy, Texas, February 12.

H. R. KAUFFMAN, M.D., Monroe, Wis., to Miss Emma G. Beach of Columbus, Ohio, February 12.

T. M. WALSH, M.D., Sutton, W. Va., to Miss Gertrude Haymond of South Sutton, W. Va., February 10.

WILLIAM B. CAMPBELL, M.D., Menomonee Falls, Wis., to Miss Belle Bannon of Waukesha, Wis., February 13.

J. H. EUGENE ROSAMOND, M.D., Grand Lake, Ark., to Miss Anna Jane Trotter of Winona, Miss., March 1.

BENJAMIN WILLIAM DUDLEY, M.D., Lexington, Ky., to Miss Ethel Croxall Slingluff, Baltimore, February 21.

Deaths.

Albert B. Prescott, M.D., Ph.D., LL.D., for 40 years a member of the faculty of the Department of Medicine and Surgery of the University of Michigan, died from organic heart disease, February 25, aged 72. He was graduated in medicine from the University of Michigan in 1864, and served for one year as assistant surgeon in the Army. In 1865 he was appointed assistant professor of chemistry, and five years later his title was changed to professor of organic and applied chemistry. Since 1876 he has been dean of the pharmacy department, and since 1884 director of the chemical laboratory. He was president of the American Association for the Advancement of Science in 1891, and has been honored by election to numerous foreign chemical societies. As an author he has produced the following books: "Outlines of Proximate Organic Analysis"; "Chemistry of Alcoholic Liquors"; "Qualitative Chemical Analysis"; "First Book of Qualitative Chemistry," and "Manual of Organic Analysis." His original contributions to current chemical literature were numerous and of high grade, and as a teacher he has inspired many students who, following his example, have enriched science by their researches.

John H. Claiborne, M.D. University of Virginia, Charlottesville, 1849, Jefferson Medical College, Philadelphia, 1850; surgeon of the Twelfth Virginia Infantry, C. S. A., during the Civil War; who organized and equipped many hospitals, served in both houses of the legislature, and was ex-president of the Medical Society of Virginia, and member of the Southern Surgical and Gynecological Association and of the American Public Health Association, died at his home in Petersburg, Va., February 24.

Edward C. W. O'Brien, M.D. University of Buffalo Medical Department, 1867, a curator of the University of Buffalo; five times health officer of Buffalo; consulting physician to Providence Retreat for the Insane; surgeon to the Buffalo Fire Department; formerly surgeon of the Seventy-fourth Infantry, N. G., New York; ex-president of Erie County Medical Society and the University of Buffalo Alumni Association, died at his home in Buffalo, from influenza, February 25, after a short illness.

John H. Granniss, M.D. Medical Institution of Yale College, New Haven, Conn., 1868, a member of the American Medical Association; some-time president and vice-president of the Connecticut Medical Society, a veteran of the Civil War, and in the hospital corps of the Army and Navy, for several years health officer and medical examiner of Saybrook, Conn., died at his home in that place, February 17, from influenza, after an illness of one month, aged 60.

Charles E. Clark, M.D. Rush Medical College, Chicago, 1886, of Kansas City, Mo., a member of the American Medical Association and the Missouri State Medical Association; ex-president of the Jackson County Medical Society; professor of laryngology, Kansas City Medical College, a specialist on diseases of the nose and throat, died from tuberculosis in Colorado Springs, where he had gone for his health, February 17, after an illness of six months, aged 47.

Alfred Hadley Lindley, M.D. Jefferson Medical College, Philadelphia, 1850, a pioneer practitioner of Minneapolis, and one of the founders of the Hennepin County Medical Society, died at his home in Minneapolis, February 16, from pneumonia, aged 83. The Hennepin County Medical Society, at a special meeting, February 17, passed resolutions of regard and regret and appointed a committee to represent the society at the funeral.

Alonzo I. Hunt, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895, president of Hamilton Township Board of Health, died at his home in Hamilton Square, N. J., February 13, from pneumonia, after an illness of six days, aged 34. The Mercer County Medical Society, at a special meeting, February 14, appointed a committee to draft a memorial on Dr. Hunt, and a committee to attend his funeral.

Joseph B. Whiting, Jr., M.D. College of Physicians and Surgeons of Chicago, 1887, a member of the Association of Military Surgeons of the United States; major and surgeon of the First Infantry, N. G. Wis.; surgeon of the First Wisconsin Infantry, U. S. V., during the Spanish-American War, died suddenly at his home in Janesville, Wis., February 19, aged 39.

Alfred L. Buchan, M.D. Rush Medical College, Chicago, 1871, of Racine, Wis., a member of the Wisconsin State Medical Society, and for several years a member of the State Board of Health, died at the home of his brother in Dover, Wis., February 17, from cancer of the liver, after an illness of more than a year, aged 57.

Otto Kohlhase, M.D. Marion Sims-Beaumont College of Medicine, St. Louis, 1903, assistant surgeon, U. S. Navy, died from yellow fever on board the U. S. S. *Boston*, at Panama, January 28, after an illness of eight days, aged 27. He was buried in the Arlington National Cemetery, February 20, with military honors.

Flavius J. Downer, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1871, assistant physician at the Upper Peninsula Hospital for the Insane, Newberry, Mich.; formerly chief surgeon for the Quincy Mine, Hancock, died suddenly at Newberry, February 18, from heart disease, aged 67.

Obadiah V. Garnett, M.D. Jefferson Medical College, Philadelphia, 1855, of Paterson, N. J., surgeon in the Confederate service during the Civil War; for many years local surgeon of the Erie Railway, died in the Paterson General Hospital, February 17, from chronic nephritis, after a long illness, aged 70.

Henry E. Woodbury, M.D. University of Georgetown Medical Department, Washington, D. C., 1863, acting assistant surgeon in the Army during the Civil War; for more than fifty years a resident of Washington, D. C., died at his home in that city, January 15, from chronic bronchitis, after a long illness.

Abner Render Wellborn, M.D. New York University, New York City, 1845, surgeon in the Confederate service during the Civil War; some-time clerk of the Superior Court of Coweta; for many years a practitioner of Atlanta, died at the home of his daughter in Columbus, Ga., February 4, aged 83.

Richard W. Sanders, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1851, a member of the Virginia House of Delegates, 1893 and 1894; president of the Southwest Virginia Medical Association, died at his home in Max Meadows, Va., February 3, aged 68.

James T. Berry, M.D. University of Louisville Medical Department, 1875, some-time superintendent of the Kentucky Institute for the Education and Training of Feeble-Minded Children, Frankfort, died suddenly at his home near Lagrange, Ky., February 20, aged 64.

John A. Westerfield, M.D. University of Louisville Medical Department, 1880, but a practitioner for 58 years; a surgeon in the Mexican and Civil wars; for many years in Atkins, Ark., died at his home in McGregor, Texas, February 3, from senile debility, aged 84.

William W. Whitney, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1862; acting assistant surgeon during the Civil War; formerly of Union, N. Y., died at his home in St. Augustine, Fla., January 22, from pneumonia, aged 76.

James Taylor Pirtle, M.D. St. Louis Medical College, 1864, one of the oldest members of the St. Louis Medical Society, surgeon in a Missouri regiment during the Civil War, died at his home in St. Louis, February 19, after an illness of several years, aged 69.

J. Theron Renouff, M.D. Southern Medical College, Atlanta, 1887, late professor of materia medica and therapeutics in the Woman's Medical College of Georgia, Atlanta, died suddenly from angina pectoris at his home in Atlanta, February 13, aged 55.

Henry R. Brown, M.D. New York, 1867, a member of the American Medical Association; for several years chairman of the Board of Health of Leominster, Mass., died at his home in that city, February 16, from erysipelas, after a short illness, aged 63.

Reuben L. Shimer, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1858, of Washington, D. C., died at the home of his nephew in Redington, Pa., February 14, from cerebral hemorrhage, after a short illness, aged 71.

Abel N. Witherspoon, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1854, surgeon in the Confederate service during the Civil War, died at his home in Corsicana, Texas, February 10, from influenza, aged 76.

William C. Blackman, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1847, one of the oldest physicians of Davidson County, Tenn., died at his home near Overton Station, February 14, after a long illness.

George O. Cummins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, a member of the county and state societies, died at his home in Dover, N. J., February 14, after an illness of eight days, aged 62.

Samuel L. Green, M.D., twice a member of the Nebraska legislature, and at the time of his death county judge of Red Willow County, died at his home in McCook, Neb., January 29, twelve days after a fracture of the femur, aged 82.

Spencer Van Dalsen, M.D. College of Physicians and Surgeons in the City of New York, 1876, died at his home in Paterson, N. J., February 16, from bronchopneumonia, following influenza, after an illness of several weeks, aged 52.

Thomas B. Bloomfield, M.D. College of Physicians and Surgeons in the City of New York, 1876, for many years district medical examiner, died at his home in Westbrook, Conn., February 17, from heart disease, aged 60.

John Jackson Dearing, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1847, died at his home in Covington, Ga., January 30, from senile debility, after an illness of twelve days, aged 82.

Israel T. Hunt, M.D. Harvard University Medical School, Boston, 1870, while delirious, jumped or fell from the second story of his house in Charlestown, Boston, February 16, and was instantly killed, aged 65.

Henry B. Fay, M.D. Howard University Medical Department, Washington, D. C., 1881, of Minneapolis, died at the Swedish Hospital in that city from nephritis, February 11, after a brief illness, aged 46.

William F. Robertson, Jr., M.D. Tulane University of Louisiana Medical Department, New Orleans, 1860, died suddenly from cerebral hemorrhage at his home in Iamonia, Fla., February 8, aged 64.

Richard E. Parker, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1857, died at his home in Suffolk, Va., February 20, from pneumonia, after a short illness, aged 74.

William B. Watford, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861, died at his home in Colerain, N. C., Dec. 11, 1904, after an illness of three weeks, aged 80.

James B. Houston, M.D. Medical College of Ohio, Cincinnati,

1882, of Charleston, W. Va., died at the Virginia Hospital, Richmond, Va., February 20. He was on his way to Florida for his health.

Lanford Prater, M.D. Medical College of Indiana, Indianapolis, 1872., died at his home in Lakeview, Ohio, after an illness of six weeks, from the effects of a carbuncle, February 9, aged 64.

James M. Culbertson, M.D. Miami Medical College, Cincinnati, 1855, died at his home in Alliance, Ohio, from cystitis and vesical catarrh, January 30, after an illness of three years, aged 75.

Elisha Roach, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1860, died at his home in Tatamagouche, Nova Scotia, February 13, after a lingering illness, aged 68.

D. Newell Waterbury, M.D. Cincinnati, 1874, formerly of Liverpool, N. Y., died at the State Odd Fellows' Home, Syracuse, from pneumonia, January 24, after a short illness, aged 68.

James G. Wingo, M.D. Missouri Medical College, St. Louis, 1881, formerly of Lock Spring, Mo., died at his home near Wright, Texas, February 15, after an illness of three or four years.

Edwin A. Oppelt, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1858, died at his home in Loogootee, Ind., February 18, after an invalidism of six years.

Alfred C. Post, M.D. Harvard University Medical School, Boston, 1891, of Salt Lake City, Utah, died in Denver, Nov. 26, 1904, from heart disease, after an illness of two years, aged 37.

Thomas B. Jefferson, M.D. Medical Department of the University of Tennessee, Nashville, 1889, died at his home in Golden Pond, Ky., February 9, from hemorrhage of the lungs.

Elihu Russell Houghton, M.D. Bellevue Hospital Medical College, 1888, formerly of the U. S. Navy, died at his home in New York City from appendicitis, February 19, aged 40.

James Paxton Barclay, M.D. New York University, New York City, 1871, died at his home in Eutaw, Ala., February 13, from heart disease, after an illness of two days, aged 57.

George Osborn, M.D. Cincinnati College of Medicine and Surgery, 1874, died at his home in Sebree, Ky., February 12, from pneumonia, after an illness of five days, aged 57.

John Stafford, M.D., a graduate of Hobart College, the oldest physician in the vicinity, died at Rochester, N. Y. He would have been 100 years old had he lived until March 15.

Luther C. Bean, M.D. Vermont Medical College, Woodstock, 1849, the oldest practitioner of Waukegan, Ill., died at his home in that city from pneumonia, February 22, aged 84.

Mortimer Wright Shaw, M.D. Long Island College Hospital, Brooklyn, N. Y., 1892, of New York City, died at Middletown, N. Y., from typhoid fever, February 22, aged 37.

J. Gustave Schild, M.D. Ohio, 1898, of Toledo, died at Lexington Heights Hospital, Buffalo, N. Y., February 17, from typhoid fever, after an illness of three weeks, aged 32.

Nathaniel P. Duncan, M.D. Bellevue Hospital Medical College, New York City, 1871, died suddenly at his home in Hanford, Cal., from heart disease, February 15, aged 55.

Milton H. Thomas, M.D. Hygeio-Therapeutic College of New York City, 1856, formerly of Barnett, Ga., died at the home of his daughter in Lake City, Fla., February 2.

Charles L. Sutton, M.D. Cincinnati, 1895, of Findlay, Ohio, died, January 30, in Christ's Hospital, Cincinnati, from tuberculosis, after an illness of two years, aged 35.

Matthew A. Quirk, M.D. Medico-Chirurgical College of Philadelphia, 1898, died recently at his home in Sayre, Pa., and was buried at Auburn, N. Y., February 13.

Adolphus E. Fant, M.D. Medical College of the State of South Carolina, Charleston, 1836, died at his home in Santuck, S. C., February 11, after a long illness.

Newton F. Sweatman, M.D. Albany (N. Y.) Medical College, 1872, died at his home in Amsterdam, N. Y., February 18, from influenza, after a brief illness, aged 52.

Charles Shackleford, M.D. who had been out of practice for twenty-five years, died at the Western Kentucky Hospital for the Insane, Nov. 27, 1904, aged 84.

Jeremiah N. Sharp, M.D. Medical Department of the University of Iowa at Keokuk, 1863, died at his home in Stockton, Ill., February 22, from pneumonia.

Darius W. Dundor, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1879, died at his home in Womelsdorf, Pa., aged 48.

Henry Baxter Wilson, M.D. Tennessee Medical College, Knoxville, 1892, died suddenly at Colfax, Cal., from an overdose of morphin, Dec. 30, 1904, aged 65.

Henry J. Snow, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1857, died at his home in Kaufman, Texas, January 6, aged 78.

William Edward Griffiths, M.D. College of Physicians and Surgeons in the City of New York, 1868, died at his home in Brooklyn, February 21, aged 63.

R. J. Scott, M.D. Years of Practice, Missouri, died at his home in Brookfield Township, Linn County, Mo., Dec. 11, 1904, from angina pectoris, aged 67.

Thomas Cushing Wallace, M.D. Ohio, 1868, died at his home in Allegheny, Pa., February 16, from pneumonia, after an illness of one week, aged 65.

Alvin E. Garrett, M.D. University of Louisville Medical Department, 1892, died at his home in Sulphur Springs, Texas, February 8, aged about 50.

Richard Owen, M.D. University of Glasgow, Scotland, 1866, died at his home in Pomeroy, Ohio, February 8, after an illness of two years, aged 60.

Louis Rick, M.D. University of Bonn, Germany, 1865, died at his home in Gridley, Kan., January 27, after an illness of four months, aged 62.

Amos C. Williamson, M.D. Beaumont Medical College, St. Louis, 1889, died suddenly at his home in Kerens, Texas, February 6, aged 35.

William R. King, M.D. Harvard University Medical School, Boston, 1890, died at his home in Boston, February 17, from nephritis, aged 37.

John J. Wilson, M.D. College of Physicians and Surgeons, Baltimore, 1886, died at his home in Bristol, Conn., from pneumonia, aged 51.

Arthur H. St. John, M.D. New York, 1892, of Walton, N. Y., died at a hospital in New York City, February 3, after a long illness, aged 48.

Milton Elmer Hammer, M.D. University of Maryland School of Medicine, Baltimore, 1890, died at his home in Baltimore, February 24.

Edwin C. Austin, M.D. Illinois, 1885, died at his home in Elkhorn, Wis., February 11, after an illness of two weeks, aged 44.

Dwight W. Rector, M.D. Albany (N. Y.) Medical College, 1853, died at his home in East Troy, N. Y., February 20, aged 80.

W. L. Huggins, M.D. Albany (N. Y.) Medical College, 1899, died at his home in Alicia, Ark., February 13, from smallpox.

B. B. Drane, M.D., died at his home near Torrance, Miss., January 23, after an illness of several years, aged 74.

Lorenzo Driggs West, M.D. New York, 1849, died at his home in Painesville, Ohio, Dec. 29, 1904, aged 80.

Henry R. Worthington, M.D. Pennsylvania, 1886, died at Trenton, N. J., February 23, aged 41.

J. W. Wade, M.D., died from exposure at his home in Eldon, Mo., aged about 65.

Miscellany.

Why Patent Medicines Are Dangerous.

In the March issue of the *Ladies' Home Journal,* the editor, Mr. Edward Bok, calls the attention of his readers, and of women in particular, to a few facts which he says are not theories nor guesses at the truth, but facts—as they exist. First, no physician of standing in his profession, who discovers any formula or any new method of alleviating the illnesses or sufferings of humanity, ever keeps such a formula to himself or for his self-gain. No sooner does an honorable physician bring such a discovery to a point of proved efficiency than he freely and unreservedly announces it, in order that other physicians may use it for the benefit of humanity. As instances of this, Mr. Bok cites the discovery of the use of ether, antisepsis, the rest cure, and the *x*-rays.

The "patent-medicine doctor," on the other hand, does not give his valuable formula to the profession for its members to give to the world of suffering. He applies for a patent or for a trade-mark, and makes use of his discovery only for self-gain. As Mr. Bok puts it, "he is a doctor for the money there is in it; not for the good he can do." Furthermore, no one but the discoverer knows the ingredients of his product, for a trade-mark is granted on the name and not on the formula. There exists no control, government, state or medical, over the formula. The purchaser has no assurance that the ingredients of one bottle are identical with the next one. If the market price of one of the ingredients becomes higher, there is nothing to hinder the compounder from substituting either a cheaper quality of the same ingredient or an entirely different substance, as, for instance, wood alcohol used in place of pure alcohol, and prussic acid used in place of wild cherry bark.

Mr. Bok also points out the fallacy of anyone prescribing for thousands whom he can not see and from whose symptoms he can not possibly know whether his medicine is best for them or not. Repeated attempts to enact laws compelling patent-medicine manufacturers to print on the label of each bottle or package the exact drugs used in the medicine therein have been frustrated; these manufacturers would not dare to print the ingredients of their products, because "in revelation lies disaster"; and yet women will unhesitatingly take into their systems concoctions, the ingredients of which these men dare not reveal. If the public were once to know exactly what is in the average secret nostrum, the greater part of the patent-medicine industry of this country would see its finish so quickly that the public itself would be amazed. An analysis of patent medicines often reveals most astounding facts. Many contain enormous quantities of alcohol, one preparation as high as 65 per cent.; a soothing syrup may contain morphin; other preparations contain dangerously large doses of chloroform and ether, and so on.

The patent-medicine manufacturer must look chiefly to women for the maintenance of his business. If the American woman would withhold her patronage from these secret nostrums, the greater part of the industry would go to pieces. Mr. Bok's article touches on many phases of this question, chief of which, however, is the one dealing with the fact that these men are attempting to treat conditions of which they know nothing, existing in persons whom they can not see, with so-called medicines that often are not only ill-advised, but at times positively dangerous.

Medical Science Is Advancing.—Text-books quickly become obsolete and succeed one another so rapidly that it is almost impossible for the busy practitioner to keep up with them. Medical journals keep physicians posted in the latest developments in medical work. They are a constantly renewed text-book on all branches of medicine. Commenting on this view, the *Semaine Médicale* very pertinently exclaims: "This is what we medical journals are here for!"

Cod-Liver Oil Must Be Pure in Ohio.—The Dairy and Food Commission of Ohio has decided that cod-liver oil is a food. This ruling accords with the ideas of physicians, who usually give it more as a food than as a medicine. The commission has ruled that all the wines, essences, cordials, or so-called active principle preparations of cod-liver oil, can not in the future use the name cod-liver oil, for the plain and simple reason that they do not contain the oil.

Legible Prescription Writing.—*Meyer Brothers' Druggist* urges that physicians in writing prescriptions ought not to lose sight of the fact that signs of quantities indistinctly written lead to mistakes in compounding. The scruple sign and dram sign and the dram and ounce signs are frequently so badly made that it is impossible to discriminate between them, unless, of course, one can judge by the doses. This, however, is not always possible, especially in prescriptions bearing "Use as directed" label, or no directions at all.

Simplified Intratracheal Injections.—Mendel of Paris (*Bull. de la Soc. Méd. des Hôpitaux*, Paris, xxi, No. 35, 1904) draws the tongue of the subject forward and holds it firmly. The pharynx serves as a funnel opening into the trachea, the entrance into the esophagus being completely closed by the traction on the tongue. A fluid injected against the wall of the pharynx flows down spontaneously into the air passages, as was conclusively established by tests on a tracheotomized subject with colored oil. If the fluid used is not irritating, there are no reflex phenomena as it runs down.

Indirect Organ Therapy of Exophthalmic Goiter.—The leading article in the first number of the new German medical periodical, *Medicinische Klinik*, is by von Leyden. It reports very satisfactory results obtained in a number of cases of exophthalmic goiter by administration of the active substance isolated from the milk or blood of goats deprived of the thyroid gland. Burghart, Blumenthal, Madsen of Copenhagen and Möbius of Halle have each experimented in this line, the latter using the blood of thyroidectomized wethers for subcutaneous injection or ingestion per os. Madsen gives the dried blood of thyroidectomized goats, Burghart, the active substance isolated from the milk. (See THE JOURNAL, xl, page 680, and xli, page 995.)

The Amenities of the Medical Profession.—The editor of the *Gaz. Méd. Belge* vouches for the truth of the following story told by a French physician: He was summoned in haste to a consultation in a case of placenta previa. The husband asked whether they would guarantee to save his wife, and was told that the physicians would guarantee nothing, but would do their utmost to save her. He walked nervously to and fro in the next room during the two hours before the physicians could announce that all danger was past. He remarked then that they were lucky, as he had fully intended to shoot them—producing a revolver from his pocket—if his wife had died. When the physician's bill for $200 was presented the husband protested most vigorously against the charge, but the physician merely remarked: "My skin is worth more than $200," and the amount was paid without further ado.

Straw Charcoal Dressings of the Japanese.—Correspondents in the Far East have had considerable to say in regard to the fine, inexpensive absorbent dressings used by the Japanese. THE JOURNAL has previously described the way of making the straw charcoal used for these dressings. Any straw will answer, either fresh or old, soiled or clean, but rice straw is generally used there, as it is so common. It is placed in an iron vessel or on the stone or dirt floor of a room, and set on fire, the vessel being covered or the doors and windows of the room being closed to diminish the supply of oxygen. The straw charcoal thus made is aseptic and very absorbent, and can be obtained without expense anywhere. It is applied to wounds in a linen bag of the proper size, and these bags are all that have to be kept on hand, as the straw is obtainable anywhere. This dressing is the invention of Surgeon-General Kikuzi, it is said, and has been extensively used for several years, with constantly increasing satisfaction.

Bulbar Symptoms of Toxic Origin Secondary to Carcinoma.—Some support appears to be given to the view that carcinoma is a parasitic disease by the cachexia and the blood depravity that so commonly develop and by symptoms of derangement of the nervous system, phenomena that can be most readily explained on the basis of an intoxication secondary to a hypothetical infective process. Manifestations of the second category have been observed independently of direct involvement of the nervous system, to any part of which they may be referable. Thus coma, mental apathy, psychic disturbances, hemiplegia with or without aphasia, or the latter alone, monoplegia, convulsions, bulbar, pontine and spinal symptoms have been noted. Especial reference to bulbar symptoms complicating carcinoma of other parts than the nervous system has been made by Dr. T. H. Weisenburg (THE JOURNAL, Feb. 11, 1905, page 502). The alterations mentioned are comparable to those that have been described as occurring in conjunction with uremia.

"Chronic Mumps of the Lachrymal Glands."—At a recent meeting of the Berlin Medical Society, Marcuse presented a case of what has been called—in the absence as yet of any name—Mikulicz' disease. The upper eyelids protruded; circumscribed tumors of the size of a hen's egg appeared in the parotid and submaxillary glands; the sublingual, the accessory parotids and Nuni's glands were enlarged. The lachrymal and salivary secretions had ceased entirely, but under long-continued massage a little saliva could be made to flow. The subjective symptoms were not conspicuous. Metabolism appeared to be normal; there was neither spontaneous nor alimentary glycosuria. The blood is also normal, a matter of interest as well as importance, inasmuch as several of these cases terminated in leukemia. Medicinal treatment, consisting of the internal administration of potassium iodid and arsenic, proved futile. Massage is being carried out assiduously. A summary of a review of the literature on this subject was given in THE JOURNAL recently, on page 664.

Puerperal Involution of Newborn.—J. Halban of Vienna read a communication on this subject at the last German Naturforscher Congress. His researches have demonstrated that the fetal organism shares in the genital phenomena of the mother, and that puerperal involution occurs in the same organs as in the mother. The mammæ show about the eighth month the same changes as the mammæ of the mother, and the fetal uterus shows hypertrophy and hyperemia, with puerperal involution after birth. The changes in the genital organs are not pathologic. In the mother they result in the formation of the decidua, but in the fetal uterus the reaction is more in the nature of menstrual changes. The mammary glands of male children and the prostate show these same changes and involution after birth. He ascribes the processes to intoxication from the placenta, regarding eclampsia as the extreme type. The organs of the fetus in eclampsia show entirely analogous changes to those characteristic of maternal eclampsia.

Melanoderma in Tuberculous Subjects.—Eliminating all other causes for the condition, out of 60 tuberculous subjects taken at random, Laignel-Lavastine found twelve cases of marked pigmentation of the skin credited to the general tuberculous condition. He reports also in detail in his article in *Archives Gén. de Méd.*, lxxxi, No. 40, 1904, a list of thirty-one cases, in 5 of which autopsies were made, and in which lesions of the solar plexus, of the suprarenals and of the splanchnics were found. These lesions are rare in non-pigmented patients, while in those presenting melanoderma, whatever may be the cellular changes of the suprarenals, these glands are hypopigmented. The pigmentation seems to be connected with the disturbance of function rather than with a uniform lesion of the organs, some of which may be unaffected in certain cases. The mechanism of the peculiar coloration in Addison's disease is the same; the suprarenals may be affected either directly or through their nervous mechanism. In Addison's disease, however, the essential cellular elements are affected, while in other forms of tuberculous pigmentation this is not necessarily the case.

Salivary Calculus.—According to Perrone, in the *Arch. Gén. de Méd.*, calculus of the submaxillary and sublingual glands, while rather rare, is more frequent than is generally suspected. Infection is its sole cause. The other theories lack scientific support. Foreign bodies may act as carriers of parasites, and the diathesis affords favorable conditions for the infection. The anatomic pathologic lesions are three: dilatation of the excretory ducts, sclerosis of the intralobular connective tissue, and atrophy of the glandular parenchyma. The sclerosis is due to infection, not, as Charcot and Gombault would have it, to simple obstruction of the ducts. Errors of diagnosis should be avoided by considering the possibility of this sclerosis. The treatment of the condition is simple, usually limited to the removal of the calculus through the duct by means of a canulated sound or by simple incision of the mucous membrane, but in some cases this may fail, and extirpation of the diseased gland may be required. The operation is not dangerous or disfiguring if a correct aseptic surgical technic is employed.

State Boards of Registration.

COMING EXAMINATIONS.

Connecticut Medical Examining Board, City Hall, New Haven, March 14-15. Secretary, Charles A. Tuttle, M.D., New Haven.

Massachusetts Board of Registration in Medicine, State House, Boston, March 14-15. Secretary, Edwin B. Harvey, M.D., Boston.

Maine Board of Medical Registration, City Building, Portland, March 28. Secretary, Wm. J. Maybury, M.D., Saco.

Idaho State Board of Medical Examiners, Boise, April 3. Secretary, Robert L. Nourse, M.D., Hailey.

Utah State Board of Medical Examiners, Salt Lake City, April 3. Secretary, R. W. Fisher, M.D., Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, April 3-4. Secretary, Ancil Martin, M.D., Phoenix.

Missouri State Board of Health, University Medical College, Kansas City, April 3-5. Secretary, Winn F. Morrow, M.D., Kansas City.

Board of Medical Examiners of Montana, Helena, April 4. Secretary, Wm. C. Riddell, M.D., Helena.

Board of Medical Examiners of the State of California, San Francisco, April 4. Secretary, Charles L. Tisdale, M.D., San Francisco.

Regular Board of Medical Examiners of Georgia, Atlanta, April 4. Secretary, F. D. Patterson, M.D., Cuthbert.

Minnesota State Board of Medical Examiners, the Old State Capitol Bldg., St. Paul, April 4-6. Secretary, C. J. Ringnell, M.D., Minneapolis.

Rhode Island State Board of Health, State House, Providence, April 6-7. Secretary, Gardner T. Swarts, M.D., State House, Providence.

State Medical Board of the Arkansas Medical Society, Little Rock, April 11. Secretary, J. P. Runyan, M.D., Little Rock.

State Board of Health of West Virginia, Parkersburg, April 11-13. Secretary, H. A. Barbee, M.D., Point Pleasant.

Board of Medical Examiners of Oregon, Portland, April 11-13. Secretary, Byron E. Miller, M.D., The Dekum, Portland.

Illinois State Board of Health, Great Northern Hotel, Chicago, April 12. Secretary, J. A. Egan, M.D., Springfield.

Board of Medical Supervisors of the District of Columbia, Washington, April 13. Secretary, Wm. C. Woodward, M.D., Washington.

South Carolina State Board of Medical Examiners, Columbia, April 24. Secretary, W. M. Lester, M.D., Columbia.

State Board of Medical Examiners of Tennessee, Nashville, Memphis and Knoxville, April 4-5. Secretary, T. J. Happel, Trenton.

Virginia December Report.—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written examination held at Richmond, Dec. 13-16, 1905. The number of subjects examined in was 9; percentage required to pass, 75. The total number of applicants examined was 108, of whom 35 passed and 28 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
University of Maryland	(1902) 80, (1904)	77
Kentucky School of Medicine	(1904)	75, 75
University of Virginia	(1903) 89, (1904)	76, 91
University of New York	(1891)	75
Baltimore Medical College	(1903) 75, (1904)	75, 85
University of the South	(1903)	75, 75
Maryland Medical College	(1903) 79, (1904)	80, 81
College of P. and S., Boston	(1903)	75
Leonard Med. College,	(1901) 75, (1903) 75, 78; (1904)	75
Medical College of Virginia	(1903) 79, (1904)	75, 81
College of P. and S., Baltimore	(1903)	77
Baltimore University	(1904)	78
Medical College of Virginia	(1904)	77
Columbian University	(1904)	81, 81
Youngstown University	(1904)	80
Louisville Medical College	(1890) 75, (1892)	75
Hospital College of Medicine, Louisville	(1900)	75
University of Tennessee	(1886)	75
Medical Department, Vanderbilt University	(1887)	75
FAILED.		
Royal University of P. and S., Rome	(1901)	52
Kentucky School of Medicine	(1904)	66
University of the South	(1903) 71, (1904) 57, 66, 70,	71
Boston University	(1904)	69
Leonard Medical College, (1902) 63, 73; (1904) 64, 66, 68, 69, 69, 72, 73, 70.		
Howard University	(1904)	70, 70
University College of Medicine	(1902) 73, (1903)	73
Jefferson Medical College	(1888)	60
Tennessee Medical College	(1900)	65
Maryland Medical College, (1902) 72, (1903) 50, (1904)		64, 73

Wisconsin January Report.—Dr. F. A. Forsbeck, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Milwaukee, Jan. 10-12, 1905. The number of subjects examined in was 16; total number of questions asked, 120; percentage required to pass, 75. The total number of persons examined was 19, all of whom passed. The following colleges were represented:

College.	Year Grad.	Per Cent.
Trinity University, Canada	(1904)	80.6
University of Michigan	(1904)	87.9
Toronto University	(1894)	89.3
College of P. and S., Chicago	(1902) 81.2, (1904) 82.6,	85.1
Northwestern University	(1903) 85.2, (1904)	83.7
Hahnemann Med. Coll., Chicago	(1888)	84.2
University of Palermo, Italy	(1896)	76.6
Rush Medical College, (1904) 82.3, 82.5, 87.6, 84.1, 87.5; (1903) 85.5.		
University of Christiania, Norway	(1892)	75.3
Hamline University	(1902)	79.4

Wyoming's New Medical Law.—The Wyoming legislature has passed the medical bill which was introduced by Dr. S. W. Johnson, a member of the house of representatives. In the upper house the interests of the bill were looked after by Drs. Levers and Price, members of the senate. Much credit is due these gentlemen for their earnest efforts in procuring the passage of the bill. It provides for the creation of a board of medical examiners, to be appointed by the governor, and to consist of three regularly licensed physicians, who shall hold office for a term of four years. Applicants for licensure must be graduates from a regularly chartered college, one which is recognized by the licensing board of the state in which it is located. In addition to presenting his diploma the applicant must pass an examination, which may be in whole or in part in writing, of an elementary and practical character, on anatomy, physiology, chemistry and toxicology, pathology, physical diagnosis, gynecology, principles of surgery, obstetrics, hygiene and bacteriology, and such other branches as are necessary to complete the system of which he is a practitioner. Authority is delegated to the board to call in regularly licensed practitioners of special systems of practice to assist in the examination. An average grade of 75 per cent. in all the branches, and not less than 60 per cent. in any one branch, is required. Not more than four examinations will be held in any one year. Certificates will be issued to all those who pass the examination, and these certificates must be recorded at the office of the county clerk of the county in which the licentiate resides. The fee for the examination is $25. The matter of reciprocity is left entirely to the discretion of the board. The bill does not prohibit gratuitous service, nor does it apply to commissioned surgeons of the United States Army and Navy, to medical examiners of relief departments of railroad companies, to consultants who are regularly licensed in their own state, or to any physician or surgeon residing on the border of a neighboring state who is duly authorized under the laws of that state to practice medicine and surgery therein, and whose practice extends into the limits of Wyoming. The bill applies to apothecaries and pharmacists who prescribe for the sick. Any person is regarded as practicing medicine who in any manner holds himself out to the public as being engaged in the diagnosis and treatment of diseases or injuries or deformities of human beings; or who suggests, recommends, or prescribes any form of treatment for the intended palliation, relief or cure of any physical or mental ailment of any person with the intention of receiving therefor, either directly or indirectly, any fee, gift or compensation; or who maintains an office for the reception, examination and treatment of any person suffering from disease or injury of body or mind; or who attaches the title of M.D., surgeon, doctor, or any other abbreviation or words to his name indicating that he is engaged in the practice of medicine.

Association News.

THE PORTLAND SESSION.

Excursions To Be Arranged from Portland to the Orient and to Alaska.

The Chairman of the Committee of Arrangements for the Portland Session, July 11 to 14, desires us to announce that arrangements are under consideration with the Pacific Mail Steamship Company for special rates to Yokohama and return, leaving immediately after the adjournment of the session. The regular round-trip rate from San Francisco is $337.50, but this rate will undoubtedly be cut considerably, if a sufficient number desire to go. Arrangements are also being perfected for a special trip to Alaskan points, and those who desire to take either of these trips should write to Dr. Kenneth A. J. Mackenzie, Portland, Ore.

Hotel Accommodations Should Be Reserved.

The hotel committee is very anxious that as many as possible write and engage rooms as soon as they have decided to go to Portland. There will be ample accommodations for everyone, but the earlier the rooms are engaged the more satisfactory will it be to all concerned. For all information address Dr. K. A. J. Mackenzie, Chairman of the Committee of Arrangements, Portland, Ore.

The Yellowstone Park-Portland Special.

The schedule of the trains for Portland by way of Yellowstone Park is as follows, slightly corrected from the description in THE JOURNAL last week: The train leaving Chicago on the morning of June 30 will reach Portland at 6 a. m., Monday, July 10. The train leaving Chicago on the morning of July 1 will reach Portland at 11:30 a. m., Monday, July 10. This will give a full day (Monday) to those leaving here June 30, and will give those leaving here on the morning of July 1, ample time for lunch and preliminary arrangements and for any Monday afternoon meeting on hand.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Feb. 25, 1905:

Stone, John H., asst.-surgeon, granted four months' leave of absence about April 1, with permission to go beyond the sea.

Shepard, John L., asst.-surgeon, left from detached duty at Washington, D. C., on fifteen days' leave of absence.

By Paragraph 20, S. O. 41, War Department, the following named asst.-surgeons are relieved from duty in the Philippine Division, to take effect on the dates set opposite their respective names, or as soon thereafter as practicable, and will then proceed by the first available transport to San Francisco, and on arrival report by telegraph to the military secretary of the Army for further orders: Capt. Wm. H. Wilson, May 12, 1905; Capt. Wm. W. Quinton, May 26, 1905; First Lieutenants E. R. Whitmore, R. U. Patterson, R. P. O'Connor, C. E. Koerper, P. S. Halloran, P. L. Boyer, Roger Brooke, Jr., May 12, 1905; Geo. P. Heard, Jas. F. Hall, Kent Nelson, Jas. M. Phalen, Chas. A. Ragan, Wm. P. Woodall, E. L. Ruffner, May 26, 1905.

Girard, A. C., asst.-surgeon general, leave of absence extended thirty days.

Morse, A. W., asst.-surgeon, relieved from duty at Vancouver Barracks, Wash., and to accompany Nineteenth Infantry to Manila, P. I., where on arrival he will report for duty in Philippine Division.

Birmingham, H. P., surgeon, left C. S. O., Department of Texas, on tour of inspection to Jackson Barracks and Fort St. Philip, La.

De Kraft, S. Chase, contract surgeon, left World's Fair Grounds, St. Louis, February 15, and arrived at Fort Thomas, Ky., with battalion of Philippine Scouts, February 16.

Wing, Franklin F., dental surgeon, granted leave of absence for fourteen days.

Lauderdale, Clarence E., dental surgeon, ordered from Fort Ringgold, Texas, to Fort Bliss, Texas.

Rietz, Hugo C., dental surgeon, left Fort Sheridan, Ill., February 17 for duty at Fort Thomas, Ky.

Kellogg, Preston S., contract surgeon, relieved from duty in the Department of the Missouri, and ordered to accompany the Third Squadron, Eighth Cavalry, from Fort Riley, Kan., to the Philippine Islands.

Marvin, Marion F., contract surgeon, relieved from further duty in the Philippine Division and ordered at the expiration of present leave of absence to Fort Robinson, Neb., for duty.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Feb. 25, 1905:

Schwerin, L. H., A. A. surgeon, detached from the *Abarenda* and ordered home to wait orders.

Payne, J. H., P. A. surgeon, ordered to the *Pennsylvania*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Feb. 22, 1905:

Williams, L. L., asst.-surgeon general, granted leave of absence for eight days from February 14.

Stimpson, W. G., P. A. surgeon, detailed as member of Revenue cutter Service retiring board at San Francisco.

Blue, R., P. A. surgeon, detailed as member of Revenue-cutter Service retiring board at San Francisco.

Oakley, J. H., P. A. surgeon, to proceed to Northport, Wash., for special temporary duty.

Foster, S. B., A. A. surgeon, Department letter of Jan. 23, 1905, granting leave of absence for twelve days, amended to read ten days from January 24.

BOARD CONVENED.

Board convened to meet at San Francisco Feb. 25, 1905, for the physical examination of officers of the Revenue-cutter Service. Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; P. A. Surgeon J. M. Holt, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from Feb. 18 to Feb. 25, 1905:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, Feb. 11-18, 4 cases.
Illinois: Chicago, Feb. 11-18, 15 cases, 4 deaths; Galesburg, Feb. 13-20, 1 case.
Louisiana: New Orleans, Feb. 11-18, 6 cases, 2 imported.
Massachusetts: Boston, Feb. 11-18, 1 case; Lawrence, Feb. 5-18, 6 cases.
Michigan: Detroit, Feb. 11-18, 5 cases; at 66 localities, Jan. 28-Feb. 4, present.
Missouri: St. Louis, Feb. 11-18, 28 cases, 6 deaths.
Nebraska: Omaha, Feb. 11-18, 13 cases.
New York: New York City, Feb. 11-18, 1 case, 1 death.
Ohio: Toledo, Feb. 4-18, 12 cases.
Pennsylvania: Steelton, Feb. 11-18, 1 case.
South Carolina: Feb. 11-18, Camden, 1 case; Charleston, 2 cases; Greenville, Feb. 4-11, 5 cases, 2 deaths.
Tennessee: Nashville, Feb. 11-18, 7 cases.
Wisconsin: Milwaukee, Jan. 21-Feb. 11, 24 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Dec. 31-Jan. 21, 2 deaths; Para, Jan. 1-31, 66 deaths; Pernambuco, Jan. 1-15, 131 deaths; Rio de Janeiro, Jan. 8-29, 123 cases, 54 deaths.
France: Paris, Jan. 28-Feb. 4, 12 cases.
Great Britain: Bradford, Dec. 26-Jan. 9, 12 cases; Leeds, Jan. 21-28, 7 cases; Jan. 28-Feb. 4, London, 1 case; Manchester, 2 cases; Newcastle-on-Tyne, 5 cases, 1 death; South Shields, 2 cases, 1 death.
India: Bombay, Jan. 17-24, 94 deaths; Calcutta, Jan. 14-21, 2 deaths; Karachi, Jan. 15-22, 1 case; Madras, Jan. 14-20, 2 cases.
Italy: Lecce Province, Jan. 26-Feb. 2, 24 cases.
Mexico: City of Mexico, Jan. 14-28, 3 cases, 3 deaths.
Norway: Christiania, Jan. 14-21, 1 case, 1 death.
Russia: Moscow, Dec. 31-Jan. 28, 26 cases, 8 deaths; Odessa, Jan. 14-Feb. 4, 4 cases, 2 deaths; St. Petersburg, Jan. 14-28, 4 cases, 2 deaths; Warsaw, Dec. 10-17, 2 deaths.
Spain: Barcelona, Jan. 1-28, 18 cases.
Turkey: Constantinople, Jan. 22-29, 9 deaths.
West Indies: Grenada, Jan. 11-28, 7 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, Jan. 8-29, 16 cases, 3 deaths.
Mexico: Merida, Feb. 5-11, 1 case.
Panama: Panama, Jan. 1-Feb. 11, 19 cases, 6 deaths, 6 cases, 2 deaths from U. S. S. *Boston*.

CHOLERA.

India: Calcutta, Jan. 14-21, 169 deaths.
Russia: Astrachan, Dec. 27-Jan. 8, 1 case; Dec. 21-Jan. 1, Government of Baku, 77 deaths; Government of Erivan, 38 cases, 33 deaths; Government of Saratow, Dec. 27-Jan. 3, 15 cases, 10 deaths; Trans-Caspian Province, Dec. 27-31, 7 cases, 3 deaths.
Turkey in Asia: Van, Jan. 1-7, 77 cases, 46 deaths.

PLAGUE.

Africa: Dec. 24-Jan. 7, East London, 8 cases, 5 deaths; Port Elizabeth, 1 case, 1 death.
Arabia: Aden, Jan. 14-21, 110 cases, 83 deaths.
Australia: Brisbane, Jan. 2, 1 death; Ulmarra, Jan. 10, 1 case.
Brazil: Bahia, Dec. 31-Jan. 7, 2 deaths; Para, Feb. 1, present; Rio de Janeiro, Jan. 8-29, 41 cases, 15 deaths.
Egypt: Jan. 14-21, Suez, 4 cases, 3 deaths; Tukh, 1 case, 1 death.
India: General, Dec. 31-Jan. 14, 58,376 cases, 50,604 deaths; Bombay, Jan. 19-24, 301 deaths; Calcutta, Jan. 14-21, 64 deaths; Karachi, Jan. 15-22, 46 cases, 46 deaths; Madras, vicinity of, Jan. 6, outbreak reported.
Japan: Hiogo, Dec. 14, 1 death.
Russia: Ural Territory, Jan. 3-9, 8 cases, 15 deaths.
Siam: Bangkok, Dec. 15-22, 9 deaths.
Straits Settlements: Singapore, Dec. 30, 3 cases.

Travel Notes.

AN INTERSEMESTRAL EXCURSION.

LEWELLYS F. BARKER, M.D.
CHICAGO.

(*Continued from page 653.*)

It is a little strange, in view of the activity in America of research dealing with the application of the methods of physical chemistry to biology, that Europeans are so little informed about what is going on here. Since the first experiments by Kahlenberg and True there has been a steady stream of physical-chemical research in biology in this country. Let anyone unfamiliar with what has been done read the address of A. P. Mathews, one of the best workers in this field, on "The Relation of Inorganic Salts to Protoplasmic Activities," in the *Yale Medical Journal*, 1903; he will speedily be convinced of the fascination of the subject, of the great progress that has been made, and of the important participation of American intellect in this domain. A high tribute to American chemico-biologic research is to be recognized in the visit of Ostwald to the University of California, on the occasion of the opening of the new physiologic laboratory there. His address, "Biology and Chemistry," delivered on that occasion, is full of stimulus for further work.

KK. WILHELMINER SPITAL.

The new Kk. Wilhelminer Spital for sick children in Vienna is situated far from the center of the city, out in the *xvi Bezirk*. It is especially interesting to visit, as it exemplifies the isolated pavilion system carried to an extreme degree. The part of the hospital devoted to infectious diseases accommodates about 300 patients and for these alone there are no less than 23 separate buildings! In the first place, there is a special house for the reception of patients; it has its own physician and several different examining rooms corresponding to the various provisional diagnoses made outside. If a patient is supposed to have scarlet fever he is sent to the scarlet fever room for examination; if measles be suspected, to the measles room, and so on. Each room is thoroughly disinfected after use with lysol. The reception house has an operating room for tracheotomies, intubations, etc., when they must be done *instanter*. If a positive diagnosis can be made at once, the patient is transferred to the particular pavilion set aside for the cases of that particular disease. If the diagnosis is doubtful the patient is placed in an isolated expectant ward until the nature of the case is cleared up.

The infectious pavilions are divided into three principal groups: 1, diphtheria group; 2, scarlet fever group, and 3, measles and whooping cough group. In each group there is a separate building for the pure disease and accessory separate buildings for the disease as variously complicated. Thus in the diphtheria group there is one pavilion for pure, uncomplicated diphtheria, a second for mixed infection of diphtheria and measles, a third for another kind of mixed infection, and so on. Each pavilion has its main ward, its *Ordinationszimmer* in which operations are done, dressings are made, injections are given, etc., its laboratory, its day room for convalescents, its isolation room, its nurses' room, its closets, its bathroom, its kitchen, etc. Outside balconies are common. The children are excellently cared for, not only medically but from the standpoint of general hygiene. The situation of the hospital in the country on the side of a hill is most salubrious; the pavilions are widely separated from one another. The physician-in-chief to the infectious wards, a very earnest man, takes the deepest interest in the welfare of the patients; the immense organization necessary seems to run smoothly. The serum treatment of diphtheria is instituted at the earliest possible moment after a probable diagnosis has been made, of course without waiting for bacteriologic control. In some cases as much as 15,000 units of antitoxin are given.

One naturally asks the question, Is such an elaborate isolation system, such a maximal development of the pavilion system necessary or desirable? and I asked it of the medical chief of the infectious wards as we wandered through the labyrinth of separate pavilions. He frankly stated it as his opinion and as the result of experience there gained that so extreme a development of the pavilion system as the Wilhelminer Spital presents is not necessary. There are many objections to it; the amount of land required is very great, the initial expense for buildings and manifolding of equipment is enormous, the professional *personnel*, including doctors and nurses, must be very large if the work is to be efficiently conducted, the *Dienerschaft* is unnecessarily increased, in bad weather the hardship on physicians and nurses may be considerable, and where the difficulties are made great for physician and nurse the patients are only

too likely to suffer from neglect. If unlimited amounts of money are available and it is lavishly enough spent to adequately supply the needs of the organization, then the luxury of the small pavilion system may be indulged; but buildings of two or more stories, with separate entrances to different parts, answer the purpose just as well, and the initial and current expenses can be thereby greatly curtailed. In the new Pasteur Hospital for Infectious Diseases, which I visited later in Paris, the problem has been more satisfactorily solved; how that hospital is arranged will be described further on in these notes.

STUDY OF ANATOMY OF THE NERVOUS SYSTEM.

Nervous anatomy, under Professor Obersteiner's leadership, is still making rapid progress in Vienna. Obersteiner's many American friends and former students will be interested to learn that the old laboratory in which, in spite of its narrow bounds and dilapidated character, a vast amount of original work has been done, is finally to be deserted; the work is being transferred to very good quarters in the old physiologic building, made vacant by Exner's occupation of the new physiologic laboratory just completed. Dr. Schacherl, the first assistant in the neurologic laboratory, showed me the vast collections of serial sections which have gradually accumulated. The material already gotten together there will form an excellent beginning for one of the central institutes for the investigation of the brain which scientists are now projecting. Among its other treasures, the institute possesses rare and valuable sets of brain sections from a series of Australian animals. Zuckerkandl's studies in the comparative anatomy of the brain were made largely in Obersteiner's laboratory. Obersteiner has proved himself to be a most stimulating, practical teacher and the Americans who have gone to him have profited much. He teaches his men how to observe, how to describe and how to use literature, and whenever possible leads his pupils into original work. One of his school, Dr. Marburg, has recently prepared an excellent atlas of the brain; its illustrations have been carefully made and the book may be warmly recommended.

PHYSIOLOGIC CHEMISTRY AND PHARMACOLOGY.

Physiologic chemistry and pharmacology, at any rate as officially represented in Vienna, appear to be far behind the times. Americans desiring to work in Europe in these important branches should at present look elsewhere than to the Austrian capital for facilities and leadership.[1]

Buda-Pesth.

"Extra Hungariam non est vita, si est vita, non estita!" So runs the Hungarian motto. Buda-Pesth is a joyous city, modern and progressive. The shops look bright and prosperous; were it not for the unintelligible words on the signboards, the names hind-end foremost, and the symbolical paintings on the portals advertising the wares on sale within, a business street in Buda-Pesth might be mistaken for one in a city in the New World.

The Royal Hungarian University (*Budapesti kiralyi magyar Tudonany-Egyetem*) has all four faculties and over 6,000 students. Its income for 1902 was $551,410

HOSPITALS AND MEDICAL COLLEGES.

The hospitals and medical schools are situated in or near the *Ullöi-ut.*. The professor of practical medicine and director of the medical clinic is F. Korányi, now an elderly man of 75 years, a member of the government and a distinguished speaker in the house of parliament. His work is cared for in his absence by Dr. H. Benedict, one of the best young medical men in Buda-Pesth. The clinic is rich in material and I saw there a number of cases of unusual interest, including osteomalacia, aneurism of the hypogastric artery with lesion of the cauda equina, pulsating pleurisy with exudate rich in cholesterin and a series of interesting neurologic cases. The younger Korányi, son of the director of the clinic well known in connection with his studies in cryoscopy, did his work in the small clinical laboratory here. He now has his own wards at the St. Stefani Hospital in the suburbs of the city.

The neurologic clinic of the university, situated in the *Baross utcza* is in charge of one of the most interesting and original men in Buda-Pesth, Prof. Ernö Jendrassik. The building is inadequate and unworthy of the good work done in the clinic. At the time of my visit some experiments were being made with the "bromid diet," in which all the ordinary salt of the food is replaced by sodium bromid. In combating the lightning pains of tabes emphasis is laid in Buda-Pesth on the value of combining half a milligram of scopolamin with each dose of morphin.

Anatomy is well taught under Professor Thanhoffer and von Lenhossék. The latter has organized the teaching in his department in an admirable manner. The laboratory work is thorough, but von Lenhossék also lays great stress on the lectures, even in gross anatomy, holding that only through the lecture can the connection of the facts learned in the laboratory and their explanation be satisfactorily grasped by the student; a text-book can not entirely take the place of the *Macht des gesprochenen Wortes*. Von Lenhossék has worked out an ingenious method for helping an instructor who can not draw well to place accurate illustrations on the board; the method is published in the *Anatomischer Anzeiger*. He lays stress on the advantages of a white board (ground glass with white drawing paper behind it) over a blackboard for class work. In his chart making he uses the convenient and inexpensive stencil apparatus made by Pospisil of Stefanau.

Von Lenhossék is an ardent supporter of the neuron doctrine. He is now hard at work at the neurofibrils and rejoices at the simplicity of the new method of Ramón y Cajal over the methods of Apathy and Bethe. He finds Bielschowsky's method also good, though more complicated than Ramón's. Von Lenhossék asserts that the neurofibrils never pass from one neuron into another and that they are never found free outside the neurons. He contends that he has absolutely disproved Apathy's theory that the neurofibrils grow from without into the nerve cells. Nissl's "gray substance" is, in his opinion, a pure myth.

Bókay is the pharmacologist at Buda-Pesth; H. Pertik, the professor of histology, is an authority on tuberculosis; his collective review on the recent literature of the subject in Lubarsch-Ostertag's yearbook makes very interesting reading.

Prague.

The quarreling between the students in the two Karl-Ferdinand universities—German and Bohemian—in Prague still pursues its intermittent course. The feeling between German and Czech runs very high in the city; even the stranger who speaks German but not Bohemian may find himself in embarrassing circumstances there. Prof. Karl Rabl, head of the department of anatomy and rector of the university at the time of our visit, showed us in his institute a great heap of stones which Czechisch students had thrown through the windows of his laboratory. German life and property are continually threatened. One German professor said to me: "We live as in a prison; life is made a veritable hell for us here." One was reminded of the isolation of the ghetto. Rabl has just been called to Leipzig to succeed the late Professor His; I have no doubt that other professors in the German University of Prague would welcome warmly a suitable call elsewhere.

Prague, aside from its general charm, is, medically, a city of unusual interest. Despite the hardships of the life, many distinguished German-speaking men are active there. Pribram has the first medical clinic and v. Jaksch the second; Chiari is the pathologic anatomist and Pick is the psychiatrist; Hueppe has hygiene, Pohl pharmacology, Hering, Jr., general and experimental pathology, and v. Zeynek medical chemistry. In the Bohemian university there are also excellent men at work; Spina has general and experimental pathology, Horbaczewski

1. Since the above was written Professor Hans Meyer, the distinguished pharmacologist of Marburg, has been called to a chair in Vienna. Under his leadership pharmacology is sure to flourish in the Austrian capital.

medical chemistry, Pawlík obstetrics and gynecology, and Hlava pathologic anatomy.

GENERAL AND EXPERIMENTAL PATHOLOGY.

As I had only a short time in Prague, I devoted most of it to an inquiry as to the nature and status of a chair which exists in Austrian universities, but which has as yet not received separate recognition in the universities of Germany, namely, that of general and experimental pathology. The functions of this chair approach, to a certain degree, the ideal that I have had in mind for some time for a certain number of chairs in internal medicine, the main features of which are outlined in an article entitled "Medicine and the Universities." The chair as it is instituted in Austria might be better called "Pathological Physiology" or "Observational and Experimental Medicine," perhaps. The most important feature is the combination of a laboratory for experimental pathology with a medical clinic, under the leadership of one man.

The movement began with the appointment of Knoll in Vienna. The general character and aim of the movement appealed strongly to the late Professor v. Ziemssen of Munich, and he tried to have Knoll called to Munich. Earlier in these notes I have pointed out how admirably the Medical-Clinical Institute in Munich which was designed by v. Ziemssen is adapted for a combination of laboratory and clinical work. But Knoll died; v. Ziemssen lost interest and died. Austria established three such chairs, one in Vienna, occupied by Paltauf, whose assistant, Biedl, is interested especially in the continuation of the line of work begun by Knoll; one in Innsbrück, occupied by Löwit, and one in Prague, occupied by Ewald Hering, Jr. The training prerequisite to an adequate filling of the chair is in experimental physiology and pathology and clinical work. One of the principal ideas underlying the foundation is the desirability of the influence of clinical work on human beings on experiments in the laboratory; a second is the desirability of bringing to the bedside minds constantly in touch with the experimental side of scientific medicine. As everyone knows, there is all too wide a gulf fixed between the work of the first two years of the medical school and that of the last two years. Many of our great medical educators have lifted up their voices to urge the bridging from either side of the chasm; the Austrians are making a brave attempt to effect a crossing from the side of pathologic physiology.

Hering has a ward of 15 beds, with a capable clinical assistant constantly in attendance. His laboratory is fairly well outfitted with physiologic and chemical apparatus, library and research rooms. He has several laboratory assistants, and, very important for the experimental work, a well-trained mechanic. His teaching is divided between the laboratory and the ward. In the laboratory practical course he produces experimentally in animals a series of general and special pathologic conditions and these are studied from the physiologic rather than from the anatomic side. In cases selected from the clinics of Pribram and v. Jaksch and transferred to his wards, he demonstrates the symptoms and discusses the pathologic physiology underlying them.

It will be seen that this chair of general and experimental pathology is a sort of middle thing between pathology and physiology as usually thought of, on the one hand, and internal medicine and perhaps surgery, on the other. This arrangement has advantages and disadvantages. Among the advantages under present conditions may be mentioned (1) the possibility of a scientific study of certain clinical cases without antagonizing or coming into competition with the purely clinical men, (2) the opportunity to select suitable cases from the great aggregation of clinical material, (3) the relief from the overburden and responsibility which the entire management of the great clinics themselves would entail, (4) the opportunity for a minute and exact study of individual cases, and (5) the possibility of returning cases to the major clinics as soon as they have been studied thoroughly, thus always keeping the beds filled with "active" cases. Among the disadvantages are (1) the necessity of limiting one's problems to certain clinical features for fear of coming into conflicts with the leaders of the major clinics, (2) the absence from such a ward, unless it has also single rooms for private patients, of the class of cases that never enter the public wards of a hospital.

The teaching as at present carried on in connection with the chair is given in the third year; this has the advantage of being near the student's physiologic knowledge, but the disadvantage that he has yet none, or but few, clinical ideas. Much might be said in favor of continuing this kind of work after the student has had considerable observational clinical experience. A drawback in Austria is the limited budget available for these new chairs. For their proper development large funds are necessary—larger than are likely to be forthcoming in that country in the near future, I fear. Some of the men holding chairs there fortunately have private means which make them independent of their honorarium. But it is greatly to the credit of Austria that she has recognized a crying medical need and at least made an effort to meet it.

Hering's studies thus far have dealt largely with the pathologic physiology of the nervous and circulatory systems. His investigations into the various forms of ataxia, his studies of antagonistic and synergistic muscular contractions, his inquiries into the nature of intracentral inhibition and his observations with the finer physiologic recording instruments on the irregularities of the pulse have all enriched clinical as well as purely physiologic knowledge.

NEED FOR SCIENTIFIC CLINICAL WORK.

The example set by Austria, it seems likely, will soon be followed by Germany. The Berlin pathologist, Professor Orth, in his address before the German Pathological Society, recently made a strong plea in favor of pathologic physiology; it is rumored that Bickel, who was trained clinically under Ebstein in Göttingen is to have charge of a sub-department of combined clinical, physiologic and pathologic work in connection with the Berlin laboratory of pathology.

(To be continued.)

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Eczema in Children.

In the treatment of infantile eczema F. J. Poynton, in the London *Clin. Jour.*, states that the treatment must be both local and general. The diet may require revision, such as limiting the amount of sugar or starch in infants and the withholding of cakes, jams, and sweets from older children. The author mentions the compressed and manufactured foods, only to condemn them. If the eczema is acute, and the child highly fed, meat is best withdrawn from the diet. On the other hand, if the child is anemic, weak, and poorly fed, a diet of plain meat, eggs, milk, milk puddings and fish is advisable. Careful management of the bowels is of prime importance, and small doses of sulphate of magnesia may be of great service.

LOCAL REMEDIES.

Before the application of any preparation locally, the skin must first be prepared. This is of especial importance in dealing with dispensary cases on account of the scabs and crusts

which have been allowed to form. To do this, light poultices applied for three hours may be used when the incrustations are extensive, and olive oil or boric acid fomentations may be applied locally when they are limited. In acute cases it is best to avoid water and to rely on oatmeal water and olive oil and to avoid the use of soap for a time.

It is important to control the irritation and to prevent the child from scratching, and one of the best preparations for this purpose is chloral internally, giving a child one year old one or two grains (.06-.12) at night and repeat it the following morning. Putting the child's hands into fingerless gloves is very efficacious, and the gloves can be worn day and night if necessary. Poynton prefers this to putting the child in a straight-jacket. Cardboard splints applied to the arms are sometimes of service. The head and face must be protected, and the author recommends a butter-linen mask accurately applied to the face, and a linen cap which comes down well on the shoulders, to the head.

EXTERNAL REMEDIES.

The external remedies should consist of soothing, astringent or stimulating remedies, and as a general rule he uses lotions for wet eczema and ointments for the dry form of the disease.

The best ointments are those of the lead compounds. Bismuth and zinc are good astringent preparations of the milder type, and when it is desired to penetrate the surface, mercury is of value, but care must be observed in its application to large surfaces in order not to produce poisoning. When the disease becomes chronic, stimulating applications are indicated. The following is recommended in such cases:

℞. Ung. diachylon.
Ung. picis liq., āā.....℥ss 15|
M. Ft. unguentum. Sig.: Apply locally; or:
℞. Ung. glycerini plumbi subacetat. (B. P.) .℥i 30|
Sig.: Apply locally.

The latter is often healing when the ordinary tar and mercury fail. [It is of 16 per cent. strength.]

The following lotions are recommended:

℞. Zinci oxidi
Calaminæ prep., āā .....gr. xxx 2|
Glycerini
Liq. calcis, āā.....m. xxiv 1|65
Aquæ rosæ .....℥i 30|
M. Ft. lotio. Sig.: Apply locally.

For chronic irritable eczema, when the skin is not very sensitive, the following is serviceable:

℞. Creolini .....3ss 2|
Aquæ .....℥i 30|
M. Sig.: Apply locally.

If the skin is very dry glycerin, from 3ii to ℥i (8.-30.), should be added to the foregoing.

In cases of eczema capitis the lead lotion (one-half strength) should be applied on linen which is kept moist.

INTERNAL REMEDIES.

Correct alimentary disturbances with rhubarb and magnesia or rhubarb and soda, or a small dose of the gray powder followed by a few drops of castor oil in a mixture. If the urine is highly acid, from three to five grains (.20 to .30) of potassium citrate are of service.

Small doses of the wine of antimony is sometimes recommended. In the illy nourished and anemic and underfed children, quinin, cod-liver oil, or cream and raw meat juice should be given.

Pneumonia.

M. Manges, in *Med. News*, recommends the following general treatment of pneumonia:

1. Maintain life by means of careful management of the stomach by a suitable diet; prevent distention of the stomach and avoid any embarrassment to the circulation and heart. It is better to give too little food than too much, and carbonated beverages should be avoided.

2. Support the heart by means of strychnia, caffein, alcohol, camphor and ergot; these drugs are better given hypodermically. The precordial ice bag, cupping and venesection are also of value.

3. Control the hyperpyrexia. Large flat ice bags on the chest are recommended, placed on the chest, observing care not to produce an intercostal neuritis. Cold baths are contraindicated and cold sponges and packs must be used with caution. The author permits the use of antipyretics in small doses to comfort the patient.

4. Relieve suffering by small doses of morphin or heroin hydrochlorate. He considers oxygen of but little value.

5. Procure sleep and control complications, such as pleurisy with effusion, empyema, pericarditis, and endocarditis.

Dysmenorrhea.

In considering the treatment of dysmenorrhea of young girls Dalche, in an abstract in *N. Y. Med. Jour.*, advises a search into the possible causes, such as tight lacing, overstudy, physical fatigue and long sessions at the piano.

For the pain, rest, warm napkins applied locally, suppositories of belladonna are recommended. Locally for the pain in the back the following ointment is of value:

℞. Ext. hyoscyami
Ext. belladonnæ, āā.....gr. xxx 2|
Adipis .....℥i 30|
M. Ft. unguentum. Sig.: A small amount to be applied locally night and morning.

Ice should be avoided, as it checks the menstrual flow, although it relieves the pain.

The method of anesthetizing the turbinates with a solution of cocain is recommended as successful treatment in a fair number of cases.

Where the quantity of blood is almost normal, the internal treatment consists in the administration of bromids and chloral; morphin preparations should be the last resource. For the neuralgia in the lumbar region the following combination is also recommended as of value in these cases:

℞. Ichthyolei .....3iiss 10|
Spts. chloroformi .....℥ss 15|
Spts. camphoræ .....3iv 15|
Alcoholis .....℥i 30|
M. Sig.: To be painted locally over the lumbar region. Warm baths with massage to the loins, buttocks and thighs are recommended.

When the flow is excessive, hydrastis canadensis is considered the best remedy by the author. Between the menstrual periods, cold bathing of the arms and legs is recommended, and where the flow is delayed and scanty, gymnastic exercises in moderation are valuable.

The Use of Atropin in Ophthalmic Practice.

Aaron Brav, in *Medico-Chir. Jour.*, states that the sulphate is the best atropin preparation to use in ophthalmic practice. It is alkaline in reaction, and is readily soluble. It is used as a mydriatic, antiphlogistic, analgesic, iridoplegic and cycloplegic. Its action is local, as proved by the fact that it will dilate one pupil and not the other when instilled in only one eye. The quantity and strength of the solution must depend on the condition met with ordinarily, one drop of a half per cent. solution is used, and when it is desired to keep the eye in a state of mydriasis for many days, two or three instillations are necessary. As a mydriatic, atropin is indicated in all conditions where the iris is congested and when the iris is adherent to the anterior part of the capsule of the lens. It is also of value for diagnostic purposes in differentiating synechia from iritis and the latter from cyclitis.

As an antiphlogistic, atropin is very valuable, and, with few exceptions, it is indicated in all inflammatory conditions of the eye. Atropin relieves the congestion of the iris by forcing the blood out of its vessels into the ciliary vessels. At the same time, it contracts the iris and paralyzes its motor function, thus placing it at absolute rest by preventing its reaction to light. As an analgesic, atropin diminishes pain, and in some cases completely relieves the symptoms. This is accomplished, according to the author, not by its action on the sensory nerves, but indirectly by reducing the hyperemia and by paralyzing the motor filaments. It is, therefore, of value

only in those cases where the pain is due to congestion of the iris.

In cases where it is desired to paralyze the accommodation the action of the drug is noticed to be slower than on the iris, requiring two hours to produce complete paralysis of the ciliary muscle. This effect lasts from 10 to 12 days. In this connection atropin is of value in the estimation of errors of refraction, in determining hypermetropia and astigmatism, and in observing diseases of the choroid and of the retina. Atropin is of value in correcting errors of refraction in patients under 40 years of age, unless pregnancy, lactation or glaucoma are present, and in spasms of accommodation with resulting apparent myopia. Atropin is indicated in the treatment of convergent strabismus, due to an excessive hypermetropia in its early stages, and by paralyzing the accommodation prevents undue convergence.

In the diagnosis of posterior synechiæ atropin is of great value.

In keratitis, when complicated by iritis or by hyperemia of the iris atropin is indicated, as it exerts an antiphlogistic effect by contracting the blood vessels and by relieving congestion. This overbalances its increased tendency to photophobia, which can be diminished by wearing smoked glasses. In diseases of the cornea the author emphasizes the value of atropin in almost every type of inflammation, whether slight or severe, whether parenchymatous or interstitial.

In ulcers of the cornea, its value depends on its ability to keep the iris away from the cornea.

In the different forms of iritis, whether syphilitic, rheumatic or traumatic, its value has been demonstrated. In diseases of the sclera, including wounds and recent injuries, the conditions are always improved by the use of atropin.

CONTRAINDICATIONS FOR THE USE OF ATROPIN.

Atropin is contraindicated in glaucoma, and in people over forty. In cyclitis it increases the pain. In ulcers of the cornea, with impending perforation, it must be used with care, and in radial iridodialysis it is contraindicated. In the treatment of children, it must be employed with care, as it may cause toxic symptoms, and, as with many other preparations, idiosyncrasies must be looked for. In its local use toxic symptoms arise through its excretion through the lachrymal duct into the nose. The preparation must be pure; it should be neutral in reaction, and when used locally the lachrymal duct should be compressed or the lid everted.

Night Sweats in Phthisis.

The experience of J. Sorgo, chief of the Alland tuberculosis sanatorium in Germany, has convinced him that night sweats are due only partially to the tubercle toxins. The principal factor is the unhygienic conditions which the subject imposes on himself from the fear of "catching cold." Almost invariably the night sweats are banished in the sanatorium by the institution of proper hygienic measures. His article on the etiology and prophylaxis of night sweats in phthisis appears in the *Wiener med. Woch.*, Nos. 50-52, 1904.

Salicylates in Gallstone Affections.

B. Stiller of Ofen-Pest confirms the recent assertions of various authors in regard to the efficiency of sodium salicylate in the treatment of biliary lithiasis. (THE JOURNAL, Feb. 11, 1904, p. 510, No. 77.) He prescribes .5 gm. about four times a day for several weeks, after subsidence of the acute phase. He also uses warm linseed poultices and rest in bed. This treatment is an effective substitute for a course at Carlsbad, or may supplement such a course, and it will be found useful in cases with violent onset in which a Carlsbad course is not indicated until later. The best results seem to be obtained in the so-called "ineffective colics" in which the stones do not seem to get beyond the cystic duct, and in which icterus is transient or is absent altogether. Perihepatitis and cholecystitis without colics are also favorably affected by this treatment. His communication is cited in the *Münch. med. Woch.*, lii, No. 5.

Influenza.

The treatment of influenza, according to *Med. Council*, consists at first of rest in bed and a saline cathartic (sodium sulphate). After the cathartic has taken effect, hot drinks are given to the patient and heat is applied to the feet in order to produce free diaphoresis. This will rid the system of the accumulated poisons and will dissipate the acute symptoms. Depressants must be avoided. Sulphate of sodium has proved to be a very valuable drug in the treatment of this disease. A laxative dose is given every morning on awakening, and small doses —5 grains—are given every hour throughout the day. Camphor—in large doses of the tincture repeated hourly—will quickly control the disease in some persons. Ammonium salts—a combination of the chlorid and bromid—are frequently very effective. Quinin in the beginning is the best tonic drug. If there is fever and rapid pulse, acetanilid can be given, with camphor monobromate. Strychnin is the best tonic after the acute symptoms have subsided. For the cough codein may be given if necessary. Dover's powder is excellent as a cough sedative and as a diaphoretic. During convalescence strychnin and some form of wine will prove useful unless there is a poor appetite, in which case tincture of nux vomica with the compound tinctures of gentian and cinchona will give excellent results. Digestives may be necessary. Complications must be watched for, and when they occur special treatment is indicated.

Medicolegal.

Pay of Health Officer—Duties of Board.—The Court of Appeals of Kentucky says, in the case of Taylor vs. Adair County, brought to recover for services rendered as health officer, that the answer denied, on knowledge or information, that the plaintiff had been appoin'ed health officer, or had been appointed a member of the board of health. This was a sufficient denial, because these boards are not required by statute to keep records of their proceedings. Therefore, these acts, though official, are not presumed to be known to every one. Another defense was that prior to the time when the plaintiff claimed to have been appointed health officer, and to have rendered the services sued for, the fiscal court of Adair County had, by an order of court, fixed the salary of the health officer at $40 per annum, and that the plaintiff accep'ed the appointment and rendered the services with the knowledge of that fact, and had for a time acquiesced in it by accepting payments based on that allowance. The county's posi'ion was that, as the salary or compensation of the plaintiff was fixed before his term of office began, it could not be either increased nor diminished during his term, under the state consti'ution. The statute reads: "Physicians appointed as health officers for cities, towns and counties shall receive reasonable compensation for their services, to be allowed by the councils, trustees, or county (fiscal) courts of the cities, towns or counties, and to be paid as other city, town or county officers are paid, and such officers may be removed at any time by the local boards appointing them. . . ." County judges and treasurers are to be paid annual salaries, to be fixed at reasonable amounts by the fiscal courts. The fees allowed to certain officers as compensation in lieu of salaries are subject to the same constitutional limitation. But here, the court says, it is not known what services may be rendered. They are of a nature that may vary considerably in value and extent in different years. Some years no services may be rendered. Again, an epidemic of smallpox or yellow fever might take all the health officer's time for a great part of a year. For that reason it seems that the legislature has not seen proper to require a salary to be fixed and paid to such officer, but that for such services as he may render he shall be paid reasonable compensation. That can not be determined in advance, if for no other reason, because their nature and extent are impossible to be known before the emergency happens calling for them. If it is intended to fix in advance the pay for such

services, a reasonable schedule of rates might be adopted. A salary of $40, which should cover all possible services that may be required of the health officer in a year, while in some instances it might be enough, or even too much, yet in others it would be manifestly and grossly inadequate. The result must be, if it be allowed, to deter qualified physicians from accepting such appointments. In this way fiscal courts might overthrow the legislative provision in its practical application, by which it was intended that the treatment of these deadly contagions might be controlled or stamped out by the employment of skilled and competent physicians. The action of the fiscal court in attempting to so fix a salary in advance was not binding, under the circumstances shown, on the health officer. For it was his duty to do what the law required of him, under direction of the board of health, in stamping out and preventing the spread of contagious diseases; and he has the right to claim adequate pay for his services, which the fiscal court must allow, if the services were in fact rendered as required by law. However, the plaintiff's petition alleged that the county board of health, when appointing him health officer, gave him general authority and direction to look after epidemics of contagious and infectious diseases appearing in the county, and to make all necessary inspections and visitations called for by the situations that might arise. But the court is of the opinion that the county board of health had not the power to delegate its duties in such matters, and that it could not, by an attempt to do so, create any right in the health officer that did not already exist. It says that the powers given to these boards are extraordinary, seemingly justified by the most serious exigency affecting the public health. More than one person is required by statute to be appointed on the board. The legislature was evidently unwilling to leave to one person the determination of such important and drastic measures as are given to the county boards. In the judgment and fidelity of a greater number acting together is the greatest security against abuse of extraordinary power. It is to the county board of health, not to the health officer, their creature and executive, that is committed the duty of examining into those nuisances and conditions of filth and infection that tend to spread the contagious diseases, to establish quarantines, and to bring the population of an infected or suspected community into prescribed treatment and disinfection. This power is given by the statute to the board, and it must act as a board on each case or epidemic as it arises, determining the necessities of each situation from the facts then existing.

Privileged Questions as to Length of Pregnancy.—The Third Appellate Division of the Supreme Court of New York says that the case of Van Bergen vs. Catholic Relief and Beneficiary Association was brought by the plaintiff on a beneficiary certificate issued by the defendant to his wife, dated August 6. She died October 26, following. The defense was that in answer to the question put to her by the defendan'ts medical examiner, "Are you pregnant?" she falsely answered "No," by reason whereof the certificate, under the terms of her application therefor, was void. It was shown that on the 13th of October she gave birth to a stillborn child. The physician who attended her at that time was sworn for the defendant. He was asked: "How many days or months of gestation had elapsed between the conception of that child and the time of its birth?" This question was objected to as incompetent, under section 834 of the Code of Civil Procedure, and the objection was sustained. The court says that the purpose of the question clearly was not to ascertain the age of the child in utero, but was to show the length of time the mother had been pregnant, and to show that she was in that condition, and knew it, when she made her application. The burden was on the plaintiff to show, if it did not otherwise appear, that the information sought by the question was within the statutory exclusion. This burden was satisfied when the plaintiff procured from the witness the statement that whatever he learned he learned in his professional capacity as a physician, and that such information was necessary to enable him to treat the case. It was not to be expected that the trial court, who is not to be presumed to be an expert on matters of this kind, should hold, in the face of this evidence from a physician, that the information was not necessary to enable him to prescribe for his patient. The only attempt by the defendant to rebut this testimony was in a single question, as follows: "The mere fact of the birth of the child didn't enable you to diagnose the previous condition of the woman to enable you to treat her. You diagnosed that without seeing the child, didn't you?" The witness answered "Yes." Whether he meant by the affirmative answer to this compound question to testify that the fact of the birth of the child enabled him to diagnose the previous condition of the mother, to enable him to treat her, or that he could make that diagnosis without seeing the child, the court says, was not clear. It may be presumed, however, that his answer was intended to be the last and not the first portion of the question, and yet the position of the defendant was not helped. The age of the child, except as that revealed the condition of the mother, was wholly immaterial; and the physician's testimony being privileged, under the Code, with respect to a direct question asking for information concerning the condition of his patient which he acquired while treating her, and which was necessary to enable him to do so, the privilege must also be held to extend to all such information sought for by indirect questions or methods, else the purpose of law might be entirely circumvented. More than this, the question objected to was broad enough to permit the witness to give in answer thereto any information which the mother had given to him, as well as any which he might have obtained solely from an inspection of the child. Wherefore the court thinks the ruling excepted to was correct.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 18.

1 *History and Development of Surgery During the Past Century. F. S. Dennis, New York City.
2 *Kidney Diseases Requiring Surgical Interference. J. M. Baldy, Philadelphia.
3 Extraction of Cataract; Choice of Operation Based on Intraocular Conditions. S. D. Risley, Philadelphia.
4 *Efficiency of Copper Foil in Destroying Typhoid and Colon Bacilli in Water. H. Kraemer, Philadelphia.
5 *Classification of Gastric Ulcers. A. L. Benedict, Buffalo.
6 Treatment of Strangulated Hernia in the Very Old. D. Peyton, Jeffersonville, Ind.
7 Some Medical and Sanitary Experience in a Portion of the Philippines. B. G. Edger, Jr., Fort Brown, Texas.

1. **Progress of Surgery.**—Dennis enumerates the following achievements of surgery during the past century:

The annihilation of pain during surgical operation.
The elimination of sepsis after operations and injuries.
The eradication of physical suffering.
The restoration of sight to the blind.
The recovery of hearing to the deaf.
The return of lost functions to organs and glands.
The aseptic repair of injured parts.
The relief of the crippled and lame.
The restitution of speech and consciousness.
The return of activity to paralyzed members.
The removal of malignant disease.
The restoration of reason to the insane.
The correction of bodily deformities.
The alleviation of pain in disease.
The reaction from shock and collapse.
The cure of lockjaw and other infective processes.
The intervention of relief in intestinal perforation.
The extirpation of tumors, from glands and cavities.
The cure of diseases and injuries of internal organs.
The resection of diseased viscera.
The excision of joints and necrosed bone.
The amputation of diseased members.
The cure of aneurism.
The removal of cerebral and spinal neoplasms.
The reduction of mortality in all surgical diseases.
The entire removal of mortality in some surgical diseases.
The restoration of health and reason.
The salvation of human life.

2. **Kidney Diseases Requiring Surgical Interference.**—Baldy says that in many of the kidney affections for which we operate, the most prominent symptoms in the case often are not

directly referable to that organ. Two of five recent cases on which he operated were floating kidneys with all the classic symptoms, gastrointestinal and nervous disturbance, but with local symptoms in abeyance and only elicited on palpation of the organ. In one case the kidney was so movable that the patient herself could at times grasp it in her hand through the abdominal walls. One case of cystic kidney with a well-defined adenoma on its surface was taken for ovarian disease; one case of calculus of the kidney and ureter was mistaken for and operated on for an ovarian and uterine growth and a tuberculous kidney and ureter were mistaken for a pyosalpinx.

4. **Copper Foil as a Germicide.**—Kraemer, as the result of experiments, finds that copper treated water is more natural and more healthful, inasmuch as the various inorganic constituents, particularly the salts of calcium and magnesium, are in a more soluble and assimilable condition, and are less concentrated than water not so treated, and at the same time the natural gases of the water are retained. The intestinal bacteria, like colon and typhoid, are completely destroyed by placing clean copper foil in the water containing them. The effects of colloidal copper and copper sulphate in the purification of drinking water are in a quantitative sense much like those of filtration, only the organisms are completely destroyed. Pending the introduction of the copper treatment of water on a large scale, Kraemer suggests that the householder may avail himself of a method for the purification of drinking water by the use of strips of copper foil about three and a half inches square to each quart of water, this being allowed to stand over night or from six to eight hours, at the ordinary temperature, and then the water drawn off or the copper foil removed. The detail of the experiments conducted is given in full.

5. **Classification of Gastric Ulcers.**—Benedict offers the following classification of gastric ulcers, using the term in its broadest sense, and including certain causes of hemorrhage by diapedesis and punctate or linear traumatisms, which should theoretically be excluded but which are often unavoidably confused in the diagnosis and which tend to become true ulcers on account of secondary destruction of tissue by peptic digestion or bacterial lysis: 1. Peptic ulcer, including the majority of cases of gastric ulcer with copious hemorrhage. This occurs mainly in young persons and by preference in women, in the third and early in the fourth decennium, who are anemic, neurotic and overworked. 2. Erosions by chemic and thermic caustics, as in corrosive poisoning and the ingestion of liquids, at or above 60 C. 3. Ulcers due to organic vascular lesions, such as embolism, thrombosis or obliterative inflammation of a vessel. 4. Catarrhal ulcers which are, with doubtful propriety, separated from the last category, as they occur in chronically inflamed and degenerated stomachs which present minor degrees of vascular disease. The ulcers usually occur in persons rather advanced in years, and are quite analogous to so-called eczematous ulcers of the skin. They are due to all sorts of chemic and thermic irritants. 5. Varicose ulceration, analogous to the external condition of the same name, is usually due to portal obstruction, and, especially, to that dependent on hepatic sclerosis. 6. Toxemic diapedesis, with a tendency to actual rhexis, occurring in scurvy, purpuras, jaundice, typhoid and various infections. 7. Vicarious menstruation. 8. Gangrenous ulceration. 9. Phlegmonous ulceration of the stomach. 10. Specific ulcers—neoplastic, granulomatous and non-granulomatous infections, syphilis, tuberculosis, actinomycosis, dysentery, etc. 11. Traumatic ulcerations due to external crushing injuries, internal lesions and animal parasites.

Medical Record, New York.

February 18.

8 *Report of 84 Operations on the Kidney and Ureter. G. E. Brewer, New York City.
9 Standardized Gruels; Percentage Principle to Gruel Feeding. H. D. Chapin, New York City.
10 Traumatic Rupture of the Intestine Without Injury to the Abdominal Wall. C. P. Flint, New York City.
11 *Cold Fresh-air Treatment of Pneumonia in Infants and Children. W. P. Northrup, New York City.
12 Preventive Medicine; a Study in Education. E. T. Royster, Norfolk, Va.

8. **Operations on the Kidney and Ureter.**—Brewer presents a report on the results, pathologic conditions and features of unusual interest in 84 cases operated on in the past ten years for disease of the kidney and ureter. There were 27 nephrotomies, with 8 deaths; 27 nephrectomies, with 1 death; 9 nephrorrhaphies, with no mortality; 10 decapsulations on 5 patients, with 2 deaths; 5 operations on the pelvic portion of the ureter, with no death, and 6 emergency operations on traumatic cases, with 1 death. Of the 27 nephrotomies the following pathologic conditions were found at operation: Pyonephrosis in 3 cases; pyelonephritis in 1 case; tuberculosis in 2 cases; intermittent hydronephrosis in 1 case; multiple septic infarcts in 4 cases; calculus in 11 cases, while in 5 cases of exploratory nephrotomy no lesion was found. Of the 27 nephrectomies there were 2 cases of primary carcinoma, 2 cases of hydronephrosis, 2 cases of early tuberculosis, 7 cases of pyonephrosis, 6 cases of stone, 2 cases of ureterovaginal fistula following hysterectomy, 1 case of septic pyelonephritis, 1 case of general infection following traumatic rupture, 1 case of early rupture, 1 case of severe hemorrhage following exploratory nephrotomy, and 2 cases of multiple septic infarcts from blood infection. In nearly every case subjected to nephrotomy or nephrectomy the possibility of calculus as a causative factor was considered. In 36 cases the history pointed strongly to the presence of calculus either in the kidney or in the ureter. In 21 of them only did subsequent operation reveal a stone; in the remaining 15, 9 showed other lesions which clearly were the causative factors in the production of the symptoms, while in 6 no lesions could be found. During the first six or seven years covered by Brewer's report the number of errors in the diagnosis of this class of cases was relatively greater than during the last two years, in which the modern methods of examination, urinary analysis, cystoscopy, urethral catheterization and the *x*-ray were employed with increasing frequency. Of the 21 cases in which stone was found 13 had severe paroxysmal pains or typical renal colic, 4 had mild paroxysmal pain, 1 had severe constant pain, and 2 had only mild constant pain. Of the 15 cases in which no stone was found, 5 had severe paroxysmal pain, 1 mild paroxysmal pain, 5 severe constant pains, 1 mild constant pain, while in 3 the history was defective. Of the 5 cases in which there was typical renal colic, in 1 there was an intermittent hydronephrosis from movable kidney, in 1 a chronic interstitial nephritis, in 1 an acute blood infection with multiple abscesses, while 2 presented no discoverable lesions of the kidney or ureter. Of the 21 cases in which stone was found there was vomiting in 11, in 9 there was no vomiting and in 1 the history was defective. Of the 15 cases in which no stone was found vomiting occurred in 7, was absent in 4, and was unrecorded in 4 cases. Frequent or painful micturition, occasionally associated with severe tenesmus, was present in 12 of the 21 cases of stone, absent in 7 and unrecorded in 2. In the cases without stone it was present in 4, absent in 7 and unrecorded in 4 cases. In the 5 cases of stone in the ureter this symptom was constantly present. Fever was present in 8 of the 21 stone cases, absent in 12 and unrecorded in 1. Of the 15 cases in which stone was absent fever was present in 4, absent in 7 and unrecorded in 4. In all these cases fever was present only when infection was known to exist. Tenderness was present in 20 of the 21 cases of stone. In 16 cases it was present in the region of the kidney; in 1 the tenderness existed over the ureter, the stone being subsequently found in the kidney; in another case the tenderness was chiefly over the kidney, the stone being found in the lower end of the ureter. In 3 other cases of stone in the lower ureter tenderness was most marked from one to two inches above the external abdominal ring. Of the 15 cases without stone there was renal tenderness in 11, while in the remaining 4 the records do not mention it. Renal tumor was rarely encountered in uncomplicated cases of renal calculus. Of the 21 stone cases hematuria was present in 10, in 9 it was absent, and in 2 the history was defective. Blood was found in 10 cases, in 7 it was macroscopic and in 3 microscopic. In the 15 cases in which no stone was found, in 5 there was hematuria, in 6 there was none, and in

4 it was not recorded. In 16 of the 21 stone cases pyuria was noted, in 4 it was absent, and in 1 it was unrecorded. It was also present in 4 of 9 cases in which stone was not found. Thirteen cystoscopies and ureteral catheterizations were done in the calculus cases. Five cases showed typical appearances and the stone was found on operation. In 2 cases the meatal appearances suggested calculus, but no stone was found. In 4 cases the catheter findings indicated renal lesion, but not necessarily stone. In 1 case there were no cystoscopic or catheter evidences of stone and none was found. In the 21 stone cases *x*-ray examinations were made in 12; 10 were positive and 2 negative—the latter being in an exceedingly corpulent individual with stones in both kidneys, which did not show in the plates. Of the cases which did not have stone, *x*-ray examinations were made in 6 instances; 3 were negative and 3 gave shadows and led to erroneous diagnosis. In one of the latter cases a calcareous mass was found adherent to, but outside the ureter. This proved to be the calcified tip of an appendix epiploica which had become adherent by inflammatory exudate to the parietal peritoneum overlying the ureter. Brewer says that there is no single symptom or sign, nor any group of symptoms or signs, that is absolutely pathognomonic of renal or ureteral calculus, unless the calculus lies in the lower ureter and can be touched by a metal bougie or catheter. The *x*-ray in competent hands is the most valuable method of examination for the diagnosis of calculous disease of the kidney or ureter. In Brewer's cases it gave positive evidence of the presence or absence of stone in 72 per cent. of all cases. Excluding the imperfect plates, it gave accurate indications in 95 per cent. of cases.

11. **Treatment of Pneumonia in Infants.**—Northrup summarizes his views on this question as follows: How to cure a baby with pneumonia. 1. Castor oil to clear the field of operation. It is the first aid to the injured. 2. Fresh air, cool and flowing. It reddens the blood, stimulates the heart, improves digestion, quiets restlessness and aids against toxemia; regulate the temperature of the air in the room inversely to that of the child. The patient's feet must always be warm and the head cool. 3. Plenty of water, inside and outside. Temperature as indicated by child's temperature. 4. Quiet and rest. 5. Correct the feedings to prevent fermentation and the formation of gas in the abdomen. If necessary, give high, hot salines. 6. Antipyretics: Water; no coal-tar products. 7. Heart stimulants: Fresh air, hot foot baths, relieving tympanitis and crowding. Hot foot baths and hot salines can be given in a cold room; both can be given under bed clothes. 8. Drugs: Whisky and strychnin. How to kill a baby with pneumonia.—Crib in far corner of room with canopy over it. Steam kettle, gas stove (leaky tubing), room at 80 F. Many gas jets burning. Friends in the room; also the pug dog. Chest tightly enveloped in waistcoat poultice. If child's temperature is 105 F., make a poultice thick, hot and tight. Blanket the windows, shut the doors. If these do not do it, give coal-tar antipyretics and wait.

Medical News, New York.

February 18.

13 Intrapleural Complications in Pulmonary Tuberculosis. S. G. Bonney, Denver.
14 Observations on 28 Cases of Prostatectomy. J. Bentley, Squier, N. Y.
15 The Opium Question in the Philippines. James A. LeRoy, Durango, Mex.
16 *Some So-called Rheumatisms. James J. Walsh, New York City.
17 Case of Primary Malignant Tumor of the Lung. Maurice Packard, New York City.
18 Calculi in Blandin's and Submaxillary Glands. Reports of Cases. Herman Jarecky, New York City.
19 Prognosis and Treatment of Chronic Nephritis. A. C. Morgan, Philadelphia.

16. **So-Called Rheumatisms.**—Walsh discusses the diagnosis of the painful affections of muscles and joints which usually are diagnosed as being rheumatism. Mention is made of a rheumatic condition in the upper arm and shoulder in a motorman and in a baseball pitcher, and Walsh suggests that in these two instances the pains were probably occupation pains. Another patient was a finisher in a molding works, and the third, a stone cutter, complained of pains in the hands and forearm. These three patients did not drink alcohol to excess, but they did take some whisky every day, and Walsh is of the opinion that a neuritis was set up in the nerves which the occupations of these patients caused them to use so much, and that as a consequence the low-grade neuritis finally developed to such a degree as to make further use of the muscle supplied by the affected nerves practically impossible. Any nerve that is overused will apparently be affected in the same way, and as many outdoor workers take some whisky straight pretty regularly, it is not surprising to find that some of them have an idiosyncrasy and develop a low-grade alcoholic neuritis. Alcohol, however, is not the only substance that acts thus insidiously. Lead often produces the same symptoms without causing any wrist drop. There is scarcely any occupation, says Walsh, in which movements are frequently repeated, or in which a particular position is maintained for a long time, in which neuritis may not be seen. Lumbago is undoubtedly more frequent among tailors than among any other class of men; sciatica is very common in those who actively bend the body at the hip, as for instance, shovelers. Those who have to stand on their feet much usually suffer in the lowest joint of the leg, at the ankle. There are few waiters who do not suffer to some degree, at least, from flat-foot. A certain number of cases of sciatica will be found in those who sit in awkward positions or in unsuitable chairs while doing much writing or clerical work. Just why sensitive nerves slightly irritated or in a sub-inflammatory condition, should produce more discomfort on rainy days, is not easily explained. The fact of the matter seems to be that any drop in the barometer by making the pressure on the surface of the body less than it was before, permits a dilatation of the capillaries at the periphery with a constant tendency to congestion that makes nerves more sensitive than they were before, especially if they have been affected by some low-grade pathologic condition. Walsh thinks that much of the so-called uric acid diathesis with the consequent rheumatic pains is nothing more than neuritis of various kinds due to overexertion, pressure on nerve trunks, preventing proper nutrition, presence of irritant substances in the blood, such as alcohol, lead, and the blood disturbances of diabetes, and to some inherited weakness of special sets of nerves.

New York Medical Journal.

February 18.

20 *Locomotor Ataxia Successfully Treated with Ultraviolet Rays. J. Monroe Liebermann, New York City.
21 Pathology of Cerebellar Tumors. (Concluded.) T. H. Weisenburg, Philadelphia.
22 Diagnosis of Tumors of the Cerebellum and the Cerebellopontile Angle, Especially with Reference to Their Surgical Removal. (Concluded.) Charles K. Mills, Philadelphia.
23 Remarks on the Surgical Aspects of Tumors of the Cerebellum. (Concluded.) Charles H. Frazier, Philadelphia.
24 Report of Three Cases of Ruptured Tubal Pregnancy. F. Alan G. Murray, Mount Savage, Md.
25 Report of a Case of Fibromata of the Vulva. Thomas S. Burr, South Bend, Ind.
26 Case of Mania á Potu and Epilepsy. Henry F. Collins, Franklin, Maine.
27 Report of a Case in Which a Bullet Caused Nine Perforations of Bowels; Operation and Recovery. J. B. Boucher, Hartford, Conn.

20. **Ultra-Violet Rays in Locomotor Ataxia.**—Liebermann reports the results he has obtained in 36 cases of locomotor ataxia treated with the ultra-violet ray. The ages of the patients ranged from 24 to 63 years. Four have been restored to good health and are now able to resume their usual vocations. Twelve have been greatly benefited, the power of coordination has been restored, pain abolished and the ability to use the upper and lower limbs without any assistance has been established. All are able to rise, to dress and to undress themselves without any help, and are sometimes able to perform such delicate operations as fixing the necktie or tying their shoes in a stooping position. In 18 cases the disease is apparently arrested with hope of further improvement and final restoration of different functions. Two patients died during treatment, one from lobar pneumonia, the other of erysipelas of the head. These cases had for years received differ-

ent forms of treatment, and while some improvement had followed from these methods, none of them had made such gratifying progress as since submitting to the ultra-violet ray treatment. For the purpose of dehematization Liebermann uses the cataphoric electrode (with a round piece of lint) saturated with adrenalin chlorid (1 to 1,000). A pad with zinc plate is applied to the abdomen, leaving it on for from three to five or ten minutes. He uses the static machine for exciting the ultra-violet lamp with the large Leyden jars as condensers. The lamp is connected by its conducting cords to the outer surface of the jars. Speaking of the mode of action of the ultra-violet ray, Liebermann suggests that it is possible that its powerful stimulating effect induces more activity in the natural healthy cell and diminishes the nutrition of connective tissue setting up a more active local metabolism; or, that it induces a local accumulation of heat energy and a congestive process through which neutrophile leucocytes are caused to immigrate in the vicinity of the degenerated cellular elements. The application of the ultra-violet ray to dehematized tissue must be made with great care and judgment. It should never be applied to more than two localities at each seance, and the area treated should be varied so that every day a different region of the cord is exposed. Liebermann treats alternately the cervical, lumbar and sacral regions. His routine treatment is as follows: 1. A warm half-bath at night before going to bed with light massage. 2. Ultra-violet rays in sittings of from ten to thirty minutes, three times a week. 3. Static electricity by means of the Morton wave current or wooden brush daily, from fifteen to twenty minutes.

Boston Medical and Surgical Journal.

February 16.

28 *Prognosis of Epilepsy. W. A. Turner, London.
29 Study of Birth Rates, General Death Rates and Death Rates from Cancer for the New England States for the Year 1900. W. F. Whitney, Boston.
30 Effect of Tubal Abscess on the Position of the Ureter. E. B. Young, Boston.
31 Surgery of Meckel's Diverticulum. J. W. Keefe, Providence, R. I.
32 *Perilous Calms of Appendicitis. R. W. Hardon, Chicago.

28. **Prognosis of Epilepsy.**—Turner reports his observations made on 516 cases of epilepsy. The following eliminations were made: All cases which showed any co-existent complication, such as organic cerebral disease, and all cases of idiocy and pronounced imbecility. Any transitory amelioration resulting from medicinal or other treatment was checked by fixing the minimum period of observation at two years. Sex, says Turney, plays little part in the general prognosis of epilepsy. Rather more males than females show arrest of the seizures, but at the same time the former sex gives a greater percentage of confirmed cases. As to the influence of an hereditary disposition, it would appear that there is as great a chance of arrest of epileptic fits in those who have, as in those who have not, a known family history of epilepsy. In those who have an hereditary history the chances as to whether the fits become arrested, improved or confirmed, are in any given case about equal. That as regards general improvement, more is to be expected in those who have no hereditary disposition, while a considerably smaller percentage of confirmed epileptics is to be found amongst those who have no family predisposition to the disease. Epilepsy commencing under 10 years of age is least favorable for arrest or improvement, and most favorable for the production of confirmed cases. In those in whom the disease commences during the period of puberty is to be found the greatest percentage of confirmed cases. Between the twenty-first and twenty-fifth year of age there is a steady diminution in the percentage of arrests and a progressive increase in the percentage of confirmed cases. After the latter age there is again a diminution in the number of confirmed cases, while senile epilepsy is essentially a tractable disorder. The earlier a case is brought under systematic treatment, the more hopeful the prognosis and the greater the probability of improvement. The longer the interval between the attacks, the greater the prospect of arrest or improvement. The greatest percentage of arrest occurred in cases of grand mal. Then followed the cases of the combined grand and petit mal, while the least favorably were the cases of petit mal occurring alone. Long periods of arrest, though as a rule indicating a favorable prognosis, are not synonymous with the cure of the disease. Long remissions may occur under bromid administration, to be followed by a relapse when the administration of the drug is discontinued. On the other hand, a remission of long duration may be broken by an accidental circumstance, such as a blow on the head, a fall, childbirth, or an acute inflammatory disorder. In order to obtain the percentage of cures Turner took only those cases which were under observation for a period of at least nine years. They form a total of 147, of which 15 were arrested for nine or more years, giving a percentage of 10.2 cures. Of the series of cases in which the disease was arrested, somewhat over 50 per cent. showed arrest within one year of treatment.

32.—See abstract in THE JOURNAL, xliii, p. 1409.

St. Louis Medical Review.

February 11.

33 Peculiar Malformation of the Bladder. Herman Tuholske, St. Louis.
34 Expectant Treatment of Appendicitis. An Excursion Into the Field Between Surgery and Medicine. A. C. Bernays, St. Louis.
35 Rupture of the Gall Bladder. (Spontaneous and Traumatic; With and Without Operation.) Historical Review of 203 Cases. Benjamin M. Ricketts, Cincinnati.

Lancet-Clinic, Cincinnati.

February 18.

36 Is Man an Omniverous Animal? Frank L. Rattermann, Cincinnati.
37 Duehrssen's Vaginal Cesarean Section and Deep Cervical Incisions. E. Gustav Zinke, Cincinnati.
38 Value of the X-ray to the General Practitioner. James E. Coleman, Canton, Ill.
39 Need of a Physician in Charge of the Hygiene of Our Schools. Hugh M. Moorf, Oxford, Ohio.

University of Pennsylvania Medical Bulletin, Philadelphia.

February.

40 Volume of Nitrogen Evolved from One Gram of Urea by the Action of Alkaline Sodium Hypobromite Solution. Leon A. Ryan and John Marshall.
41 *Incontinence of Feces in Children. Maurice Ostheimer.
42 Primary Degeneration of the Pyramidal Tracts: Study of Eight Cases, with Necropsy. (Concluded.) William G. Spiller.

41. **Incontinence of Feces.**—The presentment of three cases of incontinence both of feces and of urine, led Ostheimer to search the literature for similar cases. In all, only a dozen cases were discovered. The cause of incontinence of feces in children is either general, following wasting diseases, epilepsy, general paralysis and infectious fevers, or local, such as stretching of the anal sphincter by large prolapse of the rectum, by impaction of feces with chronic constipation or as the result of operation near the anus. In one of his cases, the condition followed an attack of scarlet fever. It persisted for two years, with gradually increasing general debility. In six months, on nutritious food, fresh air and tonics, the child completely recovered. The second case, a child aged 6½ years, suddenly lost control of both anal and vesical sphincters. He had had enuresis, both nocturnal and diurnal until almost four years old. With fresh air, exercise, atropin and strychnin, he improved at once. He had three relapses, but speedily recovered under the same treatment. The third case, a child aged 4½ years had had incontinence of feces and enuresis for an entire year. He was very nervous and had paroxysmal attacks of pain, with micturition, often passing urine colored with blood. With good food, fresh air and strychnin, the incontinence of feces disappeared in ten days, but the enuresis persisted. This was found to be due to a vesical calculus, after the removal of which the patient recovered completely.

Archives of Ophthalmology, New York.

February.

43 The Ophthalmo-Kinetograph, an Apparatus to Record Ocular Movements. E. B. Coburn, New York.
44 Ophthalmic Subjects Treated of in the Code of Hammurabi. C. A. Oliver, Philadelphia.
45 *Optic Neuritis During Lactation. G. S. Derby, Boston.
46 Presbyopia at an Early Age. W. Koster-Gzn, Leyden, Germany.
47 *Healing of Perforating Incised Wounds of the Cornea. A. Weinstein, St. Petersburg, Russia.

48 Flat Sarcoma (Endothelioma) of the Choroid. A. Knapp, New York.
49 Medullated Nerve Fibers in the Retina. K. Mayerweg, Vienna.

45. **Optic Neuritis During Lactation.**—Derby reports one case and reviews 24 others of optic neuritis occurring during lactation. The average age appears to be about 29 years, the youngest patient being 21, and the oldest 42. Primiparæ and multiparæ seem to be affected with equal frequency. Usually, there is but a single attack, although several cases give a history of diminished vision after each pregnancy. The disease affects strong, healthy women as frequently as it does those who are less robust. In practically all cases the eyes were said to be healthy previously. The seventh week was the time of election for the process to begin but it varied in wide limits from shortly before birth to over a year after. Establishment of the milk secretion, not actual nursing, is regarded as the important factor in the production of the disease, for in one case the child was premature and died, while in another it was only nursed once, dying a short time after birth. Suppression of the milk secretion coincident with the onset of the disease has been reported twice. Occasionally the patient gave a history of protracted nursing, but in a large majority of cases lactation has been entirely within normal limits. Both eyes are more commonly affected than one alone, and it is interesting to note that the monocular cases seem more prone to develop a retrobulbar neuritis than a papillitis. Ophthalmoscopic examination shows the loss of vision to be due to an inflammation of the optic nerve, the signs of which are more or less apparent at the disc. Generally, there is a well-marked papillitis, occasionally one of extreme severity, with extension of the process into the surrounding retina, while in the retrobulbar type, there may be no visible sign of inflammation, although double blindness exists. Atrophy of a varying degree usually results, but may be absent. The amount of visual diminution varies greatly, but commonly reaches a considerable degree, even to absolute blindness. The vision bears no relationship to the severity of the process, since almost normal sight may be noted, in spite of a well-marked papillitis, while total blindness has been observed without changes visible to the eye. In a corresponding manner, the vision tends to regain its normal acuteness, notwithstanding the development of atrophic change. Certain cases have shown a tendency to recurrence during each succeeding pregnancy, and in these, at the end of several attacks, there is likely to be a permanent diminution of sight. Frontal headache is a constant precursor of the disease. The pain is often localized in the orbit, and deep tenderness may be elicited by pressure on the eyeball, while movement of the eye may cause considerable discomfort. Although, as a rule, general disease does not accompany this affection, yet certain cases have shown an acute onset with headache, chills, fever, vomiting, and general malaise. In such cases suppression of the milk secretion is apt to occur. Derby is of the opinion that there is little evidence to connect this affection with lactation, and that the term lactation indicates simply, in the absence of a better term, the characteristic by which these cases may be most easily recognized. Being still in the dark as to the cause of this obscure affection, treatment must be on general lines. Elimination should be stimulated. The power of resistance must be increased in every way. Weaning should be advised. Recurrent attacks should be watched carefully.

47. **Healing of Incised Corneal Wounds.**—Weinstein has made an experimental study of the healing of incised wounds of the cornea. He found that regeneration does not take place simultaneously in all parts, but that the epithelium is first restored, then the true corneal tissue, and finally, Descemet's membrane. The proliferation of the epithelium begins immediately after the receipt of the injury, reaching its maximum in three or four hours, then gradually decreases and disappears about the end of the first day. In most cases the epithelium in the region of the scar remains considerably thicker than normal, and this thickening is doubtless useful in compensating partially, if not entirely, for the disturbance of the corneal curvature which results from the cicatricial contraction. The cornea propria is regenerated wholly through active multiplication of its own elements. In all probability, leucocytes take no part therein. The anterior portion of the wound becomes completely filled with granulation tissue at a time when the posterior portion is still occupied by fibrin. The fibrin which fills the wound participates only passively in the process of healing. Granulation elements appear in the wound after the lapse of three days, and multiply rapidly by mitotic segmentation. Descemet's membrane is completely restored after a perforating wound of the cornea.

International Clinics, Philadelphia.

Vol. IV, 14th Series, 1904.

50 The Excessive Use of Drugs in the Treatment of Chronic Diseases, with Reference to Medicinal Intoxications. George Hayem.
51 Indication for the Dechloridation Treatment. Adolphe Javal, Paris.
52 Radium; Its Value in the Treatment of Lupus, Rodent Ulcer and Epithelioma, with Reports of Cases. Myron Metzenbaum, Cleveland.
53 Treatment of Patients Who Seem Desperately Ill in Consequence of Accident, Hemorrhage or Infection. F. Lejars, Paris.
54 Chronic Polycythemia with Enlarged Spleen (Vaquez's Disease), Probably a Disease of the Bone Marrow. F. Parkes Weber and J. H. Watson, London.
55 Importance of Pathologic Diagnosis and of Etiologic Diagnosis, as Illustrated by Several Cases of Joint Disease—Arthritis Deformans, Pneumococcic Arthritis, Gonococcic Arthritis and Sciatic Neuritis, Miscalled Rheumatism. Solomon Solis-Cohen, Philadelphia.
56 Remarks on the Incidence of Gout in the United States of America and in New Communities. Dyce Duckworth, London.
57 Clinical Significance of Albumosuria. H. Senator, Berlin.
58 Differential Diagnosis of the General Enlargements of the Liver. Alexander Crombie, Calcutta, India.
59 Functional Heart Murmurs; Their Causation and Diagnosis. Robert D. Rudolf, Toronto.
60 Lateral Curvature of the Spine. E. H. Bradford, Boston.
61 Chronic Arthritis; Linear Osteotomy for Ankylosis After Tuberculous Arthritis. Wisner R. Townsend, New York City.
62 Tuberculous Spondylitis; Tuberculous Coxitis. John L. Porter, Chicago.
63 *Nerve Anastomosis for the Cure of Infantile Palsy. James K. Young, Philadelphia.
64 *Operative Treatment of Constipation. W. Arbuthnot Lane, London.
65 Some Cases of Gastric Surgery. Anthony A. Bowlby, London.
66 *Symptomatology and Diagnosis of Glenard's Disease. A. Ernest Gallant, New York City.
67 Post-climacteric Hemorrhages; Their Cause and Treatment. F. A. L. Lockhart, Montreal.
68 Traumatic Injury of the Spinal Cord; Syringomyelia; Puerperal Insanity; Alcoholic Neuritis; Paretic Dementia Due to Alcoholism; Defective Mental Development; Hysteria. Daniel R. Brower, Chicago.
69 Recent Investigations Concerning the Pathology of the Infectious Diseases. Aldred Scott Warthin, Ann Arbor, Mich.
70 Etiology and Pathology of Amebic Infection of the Intestine and Liver. Charles F. Craig, San Francisco, Cal.

63. **Nerve Anastomosis in Infantile Palsy.**—Young reports the case of a child, 5 years old, on whom this operation was done for the relief of a paralysis of the right leg. The peroneal nerve was exposed and the proximal extremity supplying the anterior tibial muscle was divided. A slit having been made in the musculo-cutaneous nerve, the cut extremities of the peroneal nerve were inserted into this and secured with fine catgut. The entire leg, from the toes to the hip, was then secured in a plaster cast. Thirteen days later the cast was finally removed and there was found to be a slight return of power in the anterior tibial muscle. Six months later, all the muscles of the anterior tibial region gave a good response to a slowly interrupted faradic current. The most important factors of the operation, says Young, are anatomic exactness and precision in the identification of the nerves. Rapidity of execution is important in order that the nerves may not be exposed to accidental injury during the course of the operation. In the selection of suitable cases for this operation two factors must be considered: The time which has elapsed since the occurrence of the palsy, and the reactions of the muscles to the electrical currents. A suitable time for operation would appear to be between six months and three years after the occurrence of the palsy, although experience may extend the time of operation to a later period. If reactions of degeneration are present the operation is useless.

64. **Operative Treatment of Constipation.**—The method

adopted by Lane for eliminating the large intestine as a portion of the gastrointestinal tract is to put the ileum into the big bowel. This is done by taking a loop of ileum about ten inches from the cecum and emptying it of its contents and preventing any entry into it by means of clamps. Such a portion of the sigmoid loop or upper part of the rectum as may be most convenient is then prepared, and adhesions, if existing, are divided as freely as possible. Care should be taken to avoid infection of the peritoneum or of the edges of the wound. The empty portions of the ileum and large bowel are then stretched alongside, and incisions, about two inches long, are made in each. The corresponding edges are sewn firmly together by continuous silk suture, supplemented by another continuous suture external to it, which passes through the peritoneal and muscular coats of the bowel. This having been done, the ileum is divided transversely, and each end closed by a double row of sutures.

66. **Glenard's Disease.**—Gallant makes the following clinical classification: 1. Developmental, which can be most frequently accounted for on the following grounds: At puberty, when the girl is rapidly increasing in stature, and her menses begin to drain the system, all healthful exercise is interdicted and her clothing is hung from the waist by tightly drawn bands, she is compressed within a corset, and light short skirts are exchanged for long, heavy trailing dresses. As the spinal column lengthens, it should carry upward all the viscera attached thereto, but owing to compression at the waist line and the weight of clothing this can not take place; stretching of the ligaments occurs and the viscera are distorted, and hang at a much lower level than normal. 2. Postpartum type, due to overdistension of the abdominal cavity by the pregnant uterus. 3. Postoperative type, occurring after operation for the removal of a tumor encroaching on the abdominal cavity. 4. Traumatic type, following a blow on the kidney region, sitting down suddenly or some unusual effort. 5. Nutritional type, as a sequelæ of confinement to bed for a long time by an injury or a lingering disease, involving a great loss of weight and muscular tone.

California State Journal of Medicine, San Francisco.

February.

71 Surgical Interference in Tuberculosis of the Bladder. G. MacGowan, Los Angeles.
72 Varieties and Etiology of Glaucoma. B. F. Church, Los Angeles.
73 Pathology of Glaucoma. W. H. Roberts, Pasadena.
74 Treatment of Glaucoma. W. S. Fowler, Bakersfield.
75 Tonsils as Portals of Infection. M. W. Frederick, San Francisco.
76 Cases Simulating Grave Mastoiditis. F. Baker, San Diego.
77 Congenital Dislocation of Hip. P. C. H. Pahl, Los Angeles.
78 Etiology of Infantile Eclampsia. J. M. French, San Diego.
79 Posture in Treatment of Disease. C. M. Cooper.
80 Dangers of Proprietary Remedy Prescribing. W. E. Bates, Davisville.
81 Report of a Case of Pernicious Anemia. B. F. Stevens, El Paso, Texas.

The Medical Standard, Chicago.

February.

82 New Theory of Fever. T. G. Atkinson, Chicago.
83 Paraffin Distended Ureters. Demonstrating the Ureteral Isthmuses and Constrictions—21 from Human, 1 from Beaver. B. Robinson, Chicago.
84 Ear Diseases Following the Acute Infections of Early Childhood. G. E. Shambaugh, Chicago.
85 Importance of Cholecystitis and Its Relation to Diseases of the Upper or Cephalic Peritoneal Cavity. B. Holmes, Chicago.
86 Revival of Medical Learning. E. J. Kempf, Jasper, Ind.
87 Cycloplegics in Refraction. C. G. Darling, Chicago.
88 Treatment of Congenital Club-foot and the Modeling Redressment. F. Mueller, Chicago.
89 New and Efficient Treatment for Specific Urethritis. C. E. Sisson, Elgin, Ill.
90 *Therapeutic and Criminal Abortion. C. B. Reed, Chicago.

90.—See abstract in THE JOURNAL, Dec. 17, 1904, p. 1890.

The Journal of the Michigan State Medical Society, Detroit.

February.

91 When Shall the Lacerated Cervix Uteri Be Repaired? H. W. Yates, Detroit.
92 Catheterization of the Ureters. W. T. Dodge, Big Rapids.
93 Recent Work in Ophthalmology. R. Conner, Detroit.
94 Chronic Bright's Disease and Pregnancy. W. H. Sawyer, Hillsdale.
95 Hysteria in Its Relation to Gynecology and Obstetrics. G. F. Butler, Chicago.

Journal Missouri State Medical Association, St. Louis.

February.

96 Psychological Therapeutics. E. H. Spooner, St. Louis.
97 Report of the State Bacteriologist to Missouri State Board of Health on an Epidemic at Wien, Chariton County, Missouri. A. J. Detweiler, Columbia, Mo.
98 Leukemia. M. P. Overholser, Harrisonville, Mo.
99 Consumption and Its Correct Treatment. C. W. Watts, Fayette, Mo.

The Journal of the Kansas Medical Society, Lawrence.

February.

100 Etiology and Prevention of Typhoid. S. J. Crumbine, Topeka.
101 Water Supplies of Southern Kansas. E. Bartow, Lawrence.
102 Some Faults in the Laws Regulating the Practice of Medicine in the Various States. J. E. Jewett, Moran, Kan.
103 Some Unusual Syphilitic Eruptions. W. Frick, Kansas City, Mo.
104 The Nutrition of the Skin. R. E. McVey, Topeka.
105 Case of Tetanus with Complications. C. B. Buck, Abilene, Kan.
106 Immunity. G. H. Hoxie, Lawrence.
107 Can Men and Women Doctors Be a Help to Each Other? M. Lobdell, Beloit, Kan.

Oklahoma Medical News Journal, Oklahoma City.

January.

108 The District Medical Society as a Factor in Medicinal Education. J. T. Moore, Galveston.
109 Pelvic Cellulitis. F. H. Clark, El Reno, Okla.

Journal of Medicine and Science, Portland.

January.

110 Prevention of Venereal Diseases. G. A. Pudor, Portland.

The Louisville Monthly Journal, Louisville.

February.

111 Has Louisville a Competent Medical Profession? J. M. Mathews, Louisville.
112 *Cysts of the Mesentery; a Clinical Note. L. S. McMurtry, Louisville.
113 Nephritis. D. O. Hancock, Henderson, Ky.
114 Congenital Syphilis. Report of Cases. H. A. Cottell, Louisville.
115 Sarcoma of the Eye, Eyelid and Orbit. S. G. Dabney, Louisville.
116 Excision of the Elbow Joint for Traumatic and Arthritic Ankylosis. B. M. Ricketts, Cincinnati.
117 Treatment of Angioma by Wyeth's Method. A. H. Barkley, Lexington.

112.—This article has appeared elsewhere. See THE JOURNAL, Jan. 14, 1905, p. 160.

Journal of the Mississippi State Medical Association, Vicksburg.

February.

118 Report of a Case of Malarial Hemoglobinuria with Comments on Treatment. J. W. Gray, Clarksdale.
119 An Address on the Business Affairs of the Profession. J. Waldauer, Vicksburg.
120 Notes on Malaria; Its Etiology and Prophylaxis. D. S. Humphreys.
121 Pregnancy Complicating Typhoid—Report of a Case. H. H. Ramsay, Perkinston.
122 Pelvic Abscess. A. G. Payne, Greenville.

The Vermont Medical Monthly, Burlington.

December.

123 Inflammation and Ulceration of the Sigmoid Flexure. D. C. Hawley, Burlington.
124 Intracranial Psammosarcoma Without Paralysis. W. D. Berry, Burlington.

The Alabama Medical Journal, Birmingham.

January.

125 Dr. Chas. M. Rosser's Presentation Speech of the Dr. W. E. B. Davis Statue, Dec. 14, 1904.
126 Tracheotomy for Gunshot Wounds of the Trachea. J. M. Gaston, Atlanta.
127 Ethical Relations of the Medical Profession to Sociology. L. Whaley, Birmingham.

Southern California Practitioner, Los Angeles.

January.

128 Prognosis and Treatment of Laryngeal Tuberculosis. E. A. Macdonald, Redlands, Cal.
129 Convulsions. S. A. Ellis, Azusa, Cal.
130 Mucosa of Upper Respiratory Tract. A Plea for More Rational Treatment. F. W. Miller, Los Angeles.
131 Tuberculosis. A Layman's Idea. R. W. Poindexter, Los Angeles.
132 Initial Lesion of Syphilis. D. B. Thornton, Los Angeles.
133 Pneumonia in High Altitudes. W. S. Smith, Prescott, Ariz.

Texas Medical News, Austin.

January.

134 Treatment of Rheumatoid Arthritis. J. L. Short, Houston.
135 Substitution. W. F. Waugh, Chicago.
136 Typhoid Fever. Alward H. White, El Paso.

Medical Review of Reviews, New York City.

January 25.

137 Three Cases of Melanosarcoma. David Webster, New York.
138 How Can Clinical Pathology Be Made of More Practical Importance to the Average Practitioner? Louis F. Bishop, New York.

Mobile Medical and Surgical Journal.

January.

139 Pelvic Abscess. Wm. T. Henderson, Mobile.
140 Round Ligament Ventrosuspension of the Uterus with Report of a Case. J. B. Killebrew, Mobile.
141 Infection and Immunity. Neal E. Skellers.
142 Some Observations on Estivoautumnal Malarial Fever. Charles A. Mohr.

Wisconsin Medical Journal, Milwaukee.

January.

143 The Establishment of an Epileptic Colony in Wisconsin. W. A. Gordon, Oshkosh, Wis.
144 Review of Laryngeal Diphtheria with Report of Cases. P. H. McGovern, Milwaukee, Wis.
145 Affections of the Facial Nerve in Diseases of the Ear. C. Zimmermann, Milwaukee, Wis.
146 Internal Medication in Infection of the Biliary Passages. F. D. Brooks, Milwaukee.
147 Some Methods of Home Modification of Milk in Infant Feeding. A. W. Myers, Milwaukee.

Memphis Medical Monthly.

February.

148 Local Influence of the Toxins of the Acute Infections of the Lungs on the Lung Structure. Eugene Wasdin, Memphis, Tenn.
149 Radical Operation for Internal Hemorrhoids Without General Anesthesia. A. B. Cooke, Nashville, Tenn.
150 Heterophoria. G. H. Savage, Memphis, Tenn.
151 Treatment of Hypertrophied Faucial Tonsils. J. F. Hill, Memphis.
152 Why Diseased Tonsils Should Be Removed. Richmond McKinney, Memphis.
153 Edebohls' Operation, Report of a Successful Case. W. B. Sanford, Memphis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

February 4.

1 Some Points in the Differential Diagnosis of Scarlet Fever, German Measles and Measles. F. J. Poynton.
2 *The Prodromal Rashes of Measles. J. D. Rolleston.
3 *Case of Fibroid Pneumonia. A. G. Auld.
4 Lobar Pneumonia Following Measles. F. C. Bottomley.
5 Various Phases of a Hospital's Work. C. Nixon.
6 Relations of Medical Men to Each Other. R. MacLaren.
7 Calculation of the Date of Delivery in Pregnancy. W. J. Cale.
8 *Scrofulous Ulcers of the Legs (Bazin's Malady) Treated by High-frequency Currents. W. F. Somerville.
9 Corneal Reflex the Most Reliable Guide in Anesthesia. H. B. Gardner.
10 Some Points in the Treatment of Brachialgia and Sciatica. J. E. Harburn.
11 Case of Precocious Puberty in a Female Cretin. F. W. Kendle.

2. **Prodromal Rashes of Measles.**—Rolleston met with prodromal rashes in 30 cases of measles, 42.8 per cent. of the total number of cases (70) observed. The youngest patient in whom a rash was seen was one year old, and the oldest nearly 9 years old. This is sufficient to prove that the eruption was not a mere roseola infantilis, such as is usually attributed to dentition or to the presence of worms. In 22 out of the 30 cases the prodromal rash appeared on the first day of the disease. In 3 of these the specific eruption followed on the second day; in 4 on the third day; in 9 on the fourth; in 3 on the fifth; in 2 on the sixth, and in 1 it was delayed until the eighth day. In 7 cases the prodromal rash appeared on the second day; in 3 of these cases it was followed by the specific eruption on the fourth day; in 3 on the third, fifth and sixth days respectively, and in 1, a case of *morbilli sine morbillis*, no specific eruption appeared. In the remaining cases prodromal rash was first seen on admission to the hospital on the fifth day and was followed by the specific eruption on the sixth day. In 10 cases the prodromal eruption preceded catarrhal symptoms by intervals ranging from one to six days. In 18 cases the two phenomena appeared on the same day, but in 11 cases the catarrhal symptoms, although present, were ill developed for a period of from one to three days after the first appearance of the prodromal rash. In only 2 cases did the prodromal rash appear subsequently to the catarrhal symptoms, in each case the interval being only one day. In 12 out of 24 cases in which Koplik's spots were noted, the prodromal rashes preceded the buccal exanthem by periods varying from half a day to five days. In the remaining 12 cases the two phenomena appeared on the same day. The isolated macules, 14 cases; blotchy erythema 10 cases; isolated papules, 9 cases; urticaria, 9 cases; scarlatiniform rash, 9 cases; circinate, erythema, 1 case. In point of time the macules and papules were the first to appear. Urticaria was the latest thing sometimes co-existent with the specific eruption. The isolated papules were frequently of the size and shape, and sometimes of the same distribution as the rose spots of enteric fever. Sometimes they would suggest the eruption of rötheln. The frequent appearance of scarlatiniform rashes on the second day of the disease, before the development of catarrhal symptoms, the accompanying injection of the soft palate and fauces and occasional deposit on the tonsils, with submaxillary adenopathy, add to the difficulties of the diagnosis. The transient nature of the eruption and the association of Koplik's spots, stomatitis and catarrhal symptoms are important factors in making a diagnosis of measles. The distribution of the eruption was as follows: On the trunk, 28 cases; behind the ears, 15 cases; limbs, 14 cases; face, 4 cases; neck, 2 cases. The short-lived existence of most of these rashes serves in a degree to account for the scanty attention they have received. Closely associated with their transient existence is the tendency to be localized, and not to affect any special situation. Highly characteristic is the simultaneous association of several varieties of eruption, and the fact that these prodromal eruptions are not accompanied by any cutaneus irritation. There is no pain or pruritis, nor is there any subsequent desquamation. These initial rashes are not of any prognostic value.

3. **Fibroid Pneumonia.**—Auld reports a case of this kind occurring in a little girl aged 8 years. The onset of the disease was sudden; there was headache, vomiting and fever, followed by delirium. The right lung became solid and a diagnosis of pneumonia was made. On the seventh day the temperature fell to 99.6 as though a pseudo-crisis had been attempted. Instead of resolving, however, the fever continued, presenting for weeks the character, more or less, of the continuous fever. A rather abrupt rise of temperature occurred in the third week. At this time the breathing was frequent and shallow and the skin was hot and dry. The right side was motionless. The heart's apex was in the normal position. Vocal fremitus was increased all over the right lung and the percussion note was so dull from apex to base as almost to warrant the designation of "flat." There was high-pitched tubular breathing with whispering pectoriloquy; no râles developed in the apex and the dullness and tubular breathing became less marked there; there was no fluid on aspiration. The temperature gradually fell until it reached normal in the tenth week. The pulse rate continued about 140, and the respirations about 40. There was no cough or expectoration. The *x*-ray showed the right lung in uniform deep shadow with the exception of the extreme apex, which showed a mottling of light and shade. The shadow was due to a consolidated lung. The patient then developed considerable cough with expectoration, the latter containing numerous tubercle bacilli. It was evident that the right apex had become extensively invaded by tubercle bacilli. The child improved later, however, and the apex showed signs of healing. At present the patient is entirely well. Auld concludes that the personal history, symptoms and physical signs leave little room for doubt that the initial lesion was an acute pneumonia, and that it invaded the lung which contained no gross lesion of appreciable character. The disease beginning acutely, may in reality be chronic in nature from the very first day. The inflammation extended to the fixed corpuscles of the alveolar walls, causing them to divide and migrate into the fibrinous exudation. In this way the alveolar cavities become filled with organized deposit. This must occur early, as only

the red or fibrinous exudation is capable of organization. The disease is febrile, it is pneumonic and it is fibroid, hence it is a fibroid pneumonia.

8. **Bazin's Malady.**—Somerville reports the case of a young woman aged 16 who presented on the anterior aspect of the left leg seven punched-out ulcers ranging in size from a little smaller than a dime to the size of a half-dollar. The ulcers had undermined irregular edges resembling markedly the ulcers produced by specific disease. The skin in the immediate neighborhood of each ulcer had the dark red "violaceous" character described by Bazin, and was free from irritability and tenderness. Forty-one applications of the high-frequency currents were made. The patient sat for about eight minutes on the auto-condensation couch; thereafter the leg was treated by the spray and also with a flat glass electrode of high vacuum connected with the top of the resonator. Very shortly after treatment was commenced the ulcers began to take on a more healthy appearance; they gradually filled up until finally they were covered entirely with healthy skin. A year later the skin was quite smooth and free from induration and although the patient had done considerable walking there was no tendency to recurrence.

The Lancet, London.

February 4.

12 The Infectivity and Management of Scarlet Fever. W. T. Gordon Pugh, London.
13 *Primary Heart Failure as the Immediate Cause of Death in Acute Diphtheritic Toxemia. Charles Bolton, London.
14 *The Cancer Problem. J. Beard, Edinburgh.
15 Characters of the Bacillus Coli as an Indicator of Excretal Contamination. Wm. G. Savage.
16 *Case of Typhoid Fever Presenting Some Unusual Features. Kenneth Anderson.
17 Hydatid Cyst Simulating Subphrenic Abscess. J. Porter Parkinson, London.
18 *Prognostic Value of the Diazo Reaction in Enteric Fever. J. D. Rolleston, Tooting.
19 The Army Medical Service of the Argentine Republic. F. Howard.

13. **Heart Failure Cause of Death in Diphtheritic Toxemia.**—Bolton says that death in acute diphtheritic toxemia is due to primary heart failure caused by extensive fatty degeneration in the heart and acute degeneration in the motor nucleus of the vagus. It can not be definitely stated whether the acute changes in the vagus nucleus would produce irritation or paralysis of the vagus. As all stages of degeneration are found at the same time it is quite likely that both irritative and paralytic effects may be felt simultaneously by different portions of the heart, and that in some cases an irritative effect may be chiefly evident. The probability is that irregularity of action would be the prominent feature, that this irregularity would be subject to great variations in degree and that in some cases a slowing of the pulse might be expected and in others an increased frequency. Such a lesion would also be quite likely to lead to vomiting. The cardiac dilatation is the result of weakness of the heart wall. The irregular pulse and fatal syncope of acute diphtheritic toxemia are, therefore, due to the disturbed innervation of an acutely degenerated heart. The heart failure exhibited in the acute stage by patients who recover is probably the result of similar though less extensive changes. At a later stage of the disease the results of these changes, together with interstitial cellular infiltration, are sufficient to produce a latent weakness of the heart which can be brought into evidence by some strain, and in this stage also degeneration of the vagus nerve plays a not unimportant part.

14. **The Cancer Problem.**—Beard says that cancer is an irresponsible trophoblast. As he conceives it in normal development and in a malignant tumor, the matter is simply a question of the victory of a stronger enzyme over a weaker one. Embryologically, the problem of cancer has been to discover the antithesis of two enzymes, and in particular to find out the enzyme capable of destroying a weaker one, and thus of leading to the degeneration of the tumor by simple atrophy. The whole story, says Beard, is but another example of that antithetic alternation which underlies all the phenomena of living things. The solution of the problem of the functional relation of embryo and trophoblast, how the latter nourishes itself by an (intracellular) acid peptic digestion and degenerates slowly by a pancreatic digestion, becomes at the same time the embryologic, if not the medical, resolution of the problems of malignant neoplasms, as well as of chorioepithelioma.

16. **Unusual Case of Typhoid.**—In Anderson's case, the onset with a rigor and with acute localized abdominal pain seemed to point to some nephritic or perinephritic suppuration and the presence of pus in the urine was at first regarded as confirmatory of this until a history of cystitis was obtained. The rapid amelioration of the pain and tenderness at the end of a week however, was a contraindication, while the irregular temperature, the pyuria and the pulmonary signs suggested the possibility of tuberculosis somewhere. Sibilant râles persisted over the right upper lobe throughout the whole illness. The absence of any cardiac murmurs, of sweats and of hematuria was against infective endocarditis with embolism in the kidney. Widal's reaction was positive and was confirmed later by the appearance of spots, the enlarged spleen and the character of the stools. The absence throughout of cerebral symptoms, even such as headache, of dicrotism in the pulse, of any marked tympanitis and, for a time, of spots which were constantly watched for but which only appeared late in the disease and were limited to about half a dozen on the back, are worthy of note.

18. **Prognostic Value of Diazo-Reaction.**—Rolleston's observations are based on 6 cases of enteric fever. In all but severe attacks the diazo-reaction tended to disappear in the course of the second or third week, this disappearance shortly preceding or coinciding with the commencement of lysis. Its reappearance during or after the completion of lysis is a warning of recrudescence, of relapse, or of complications directly due to the specific bacillus. A sudden disappearance of the reaction associated with a deterioration of the general condition is a bad sign. The character of the reaction was found to be a useful check to the history.

Bulletin de l'Académie de Medécine, Paris.

20 (Year LXIX, No. 1, January 3.) Formation of an Autoplastic Artificial Ocular Stump by Means of a Pedunculated Skin Flap.—Moignon oculaire artificiel. E. Bruch (Alger).
21 (No. 2.) *Examen du pharynx supérieur par le toucher médiat à l'aide d'explorateurs. A. Courtade.
22 (No. 3.) *Une nouvelle opération sur les muscles oculaires. E. Landolt.
23 Supériorité des sels organiques d'argent sur le nitrate d'argent (silver salts). Darier and Chauvel.
24 (No. 4.) *Appareil que décèle les plus faibles traces d'oxyde de carbone. Albert-Levy and Pecoul.
25 *Des mélanges titrés pour l'anesthésie chloroformique. P. Reynier.

21. **Exploratory Sounds for Examination of Pharynx.**—Josias in presenting Courtade's communication, remarked that the latter's "exploratory sounds" for examination of the pharynx are in daily use in his clinic and are proving a great improvement over digital examination. The least irregularity in the surface is readily perceived, and children especially submit much more quietly to this mode of investigation.

22. **Lengthening the Ocular Muscles.**—Landolt proposes for appropriate cases of strabismus the lengthening of the muscle instead of its advancement. He cuts it in the outline of a Z with the middle line perpendicular to the horizontal bars, and slides the two ends along to lengthen a contracted and sclerosed muscle.

24. **Apparatus for Testing Purity of Air in Rooms.**—The small, portable apparatus described is based on the fact that a fluid containing iodic acid changes color when in contact with 1/200,000 CO_2. The jar containing the iodic acid is heated by a spirit lamp, liberating the iodin, which passes into a glass tube containing chloroform.

25. **Automatic Apparatus for Titrated Chloroform Anesthesia.**—Reynier criticises unfavorably the various apparatus that have been presented for administering chloroform. The ideal apparatus should be small, solid, easily managed, it should automatically titrate the anesthetic while allowing the dose to be modified at will, and should absolutely prevent the

administration of an overdose. He thinks that the apparatus which he has been using recently combines all these desiderata. It is the invention of Dupont, Chabaud and Thurneyssen, and in an experience with 125 subjects it has more than realized all expectations. A thermometer on top records the temperature of the chloroform, and the range of dosage is from 0 to 12 per cent. A minor advantage is that there is no waste of chloroform. The apparatus seems to do away with surgical shock; the patients seem to be less depressed or prostrated and the operation proceeds more smoothly, while the by-effects of the chloroform were found to be less than by other methods.

Berliner klinische Wochenschrift.

26 (XLII, No. 2, January 9.) *Beobachtungen während der diesjährigen Cholera-Epidemie in Sudrussland und russisch Mittel-Asien. M. Hahn.

27 *Ueber Untersuchungen an Kindern in Rücksicht auf die v. Behring'sche Tuberkulose-Infektions-Theorie (examinations of children). H. Beitzke.

28 Ueber aplastische lymphatische Leukämie und über Stillstand (remission) bei Leukämie. A. Wolff.

29 Beitrag zur Lehre von den Funktionen des Ohr-Labyrinths. Passow. (Concluded.)

30 *Internal Treatment of Catarrh of the Bladder.—Zur innern Behandlung des Blasenkatarrhs; Urotropin und dessen Ersatzmittel. C. Posner.

26. **Recent Cholera Epidemic in Southern Russia and in Persia.**—Hahn spent his last vacation in these regions, and made a special study of the conditions in regard to the prevailing cholera epidemic. On account of the superstitions of the lower classes, religious prejudices, the tendency to shift the blame on other shoulders and the lack of any positively established successful results elsewhere, except possibly Murata's experiences in 1903, Hahn felt constrained to advise against prophylactic inoculation with anticholera serum on a large scale. In army circles, among physicians and attendants on the sick, he regards it as indispensable, and as liable to aid in promoting the knowledge of the serümtherapy of cholera. In 3 extremely severe cases the patients recovered after subcutaneous infusion of alcohol in salt solution, 200 c.c. alcohol to 800 c.c. of the physiologic salt solution. He injected from 5-2,000 c.c. in 500 c.c. doses, a total of 1-400 c.c. alcohol. The importance of prophylactic washing of the hands after defecation should be impressed on all, and children should be trained to do this. Privies and closets should be built to allow immediate washing of the hands, preferably with a towel dampened with a bichlorid solution in times of epidemics. He urges others to try the alcohol infusions according to his technic—he has never witnessed such rapid recovery in such severe cases under any other method of treatment.

27. **Tubercle Bacilli in Children's Cadavers.**—Beitzke found evidences of tuberculosis in 40 among 138 cadavers of children examined at the Berlin Pathologic Institute during the last eight months. Only 48 of the other cadavers were in a condition to be used for these researches. With a single exception not the slightest evidence of the presence of tubercle bacilli in the blood could be detected in any of this last group.

30. **Internal Treatment of Catarrh of the Bladder.**—Posner attributes to the varying nature of the infectious agent the varying efficiency of hexamethylentetramin in internal treatment of vesical catarrh. It is generally effective, but occasionally fails completely. When the infection is of a tuberculous or gonorrheal nature, this drug is almost certain to fail, and this is an aid in differentiating such processes. Success can almost be counted on when the infection is due to the staphylococcus, streptococcus or colon bacillus.

Centralblatt für Chirurgie, Leipsic.

31 (XXXII, No. 4, January 28.) *Anastomosis Between Stomach and Esophagus.—Die Anastomose zwischen Magen und Speiseröhre und die Resektion des Brustabschnittes der Speiseröhre. Sauerbruch.

31. **Resection of Cervical Portion of Esophagus.**—Sauerbruch relates that at first no better results were attained in operations on the esophagus in the pneumatic operating chamber than outside. (See THE JOURNAL, pages 1181 and 1424 of the last volume.) The last three months have witnessed a decided change for the better, and none of the 11 dogs thus operated on has died. All are lively, although as much as 7 cm. of the esophagus was resected in some instances. The factors for successful anastomosis between the stomach and esophagus are the use of the Murphy button, instead of a suture, and the adoption of some method of causing rapid formation of adhesions. An incision is made in the fifth interspace, the ribs are spread apart and the lung is pushed back with sponges until the aorta, esophagus and both vagi become visible. The esophagus is freed from its attachments and the stomach drawn up through the diaphragm. An assistant outside the pneumatic chamber introduces one-half of the Murphy button into the esophagus, and pushes it along until the operator inside the cabinet can feel and grasp it with his fingers through the stomach wall. He then pushes it up into the protruding part of the stomach, where it is reached by a small incision and its upper part allowed to protrude. The other half of the button is then introduced in the same way from without the cabinet, and part allowed to protrude through a small incision in the wall of the esophagus. It is not necessary to tie the buttons in place, as the wall clings around their neck and no suture is required. It is a very simple matter then to lock the two halves of the button together and the anastomosis is complete, without the slightest traction on the esophagus or adjacent organs. The diaphragm is then sutured, after making sure that its movements do not pull on the anastomosis. This suture, the anastomosis and finally the pleura are dabbed with compound solution of iödin to promote the formation of adhesions; the pleural cavity is rinsed and the skin sutured. This operation has been done on 13 dogs. All are lively to date except 3, who died suddenly, after jumping. It was found that death was due to defective suture of the diaphragm around the anastomosed part of the stomach. The sutures had given away as the animals jumped, and the stomach had crowded through the opening, compressing the heart. It is possible in dogs to draw up the stomach so far as to make an anastomosis between the stomach and the upper third of the esophagus. Resection of the esophagus after the anastomosis is complete is done by cutting it and ligating both stumps. The lower stump is treated like the stump of the appendix, and the upper stump is drawn down and sutured to the peak of the stomach, near the anastomosis, so that the union is doubly secured. One dog has been killed out of the 11 thus operated on, and it was found that the peak of the stomach had changed into a kind of long-drawn-out tube, which can be regarded as a kind of esophagus. A still simpler method of anastomosis is to push the lower part of the esophagus into the stomach wall, like the finger of a glove. The stomach wall rides up around it and is sutured in this position. The diaphragm is then sutured to the protruding peak of stomach. Two weeks later the stomach is opened by a laparotomy and the tip of the invaginated portion of the esophagus is cut off. This is the ideal method of excluding small circumscribed tumors of the cardia or of the lower portion of the esophagus. Experiments on the cadaver have established the fact that conditions for these operations are fully as favorable in man as in animals, and clinical experiences with 3 cases have shown that the vagi can readily be isolated, and that the fourth or fifth interspace allows ample access.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 665.

32 (XXIX, No. 4, January 28.) Fall von Tetania gravidarum. K. Schmidlechner.

32½ Ein neues Spekulum zur Scheiden-Dammnaht (suture of vagina and perineum). R. B. Keyserlingk.

Centralblatt f. d. Grenzgebiete der Med. u. Chir., Jena.

Last indexed XLII, page 1093.

33 (VII, No. 16.) *Operations on Tendons.—Ueber Verwendung von Sehnenoperationen. G. Muskat. Critical review of the literature.

34 (No. 17.) *Ueber tabische Osteo-Arthropathien der Wirbelsäule (of spine). K. Frank. (Commenced in No. 15.)

35 *Die chirurgische Behandlung der Magen-Dilatation (of stomach). D. G. Zesas. Critical review of the literature.

36 (No. 19.) *Indikationen zur chirurgischen Behandlung der Cholelithiasis. O. Heusler. Critical review of the literature. (Commenced in No. 18.)

37 (No. 20.) Die Aetiologie der Cystitis. K. Ritter von Hofmann. Critical review of the literature. 121 articles.

38 *Die Chirurgie in der Schwangerschaft, insbesondere bei internen Erkrankungen (surgery during pregnancy, especially in internal affections). O. O. Fellner. Critical review of the literature. (Commenced in No. 18.)
39 (No. 21.) *Versuche chirurgischer Behandlung von chronischen Entzündungs-Processen des Dickdarms (inflammatory processes in large intestine). M. W. Herman. Critical review of the literature.
40 (No. 22.) *Results and Dangers of Gelatin.—Erfolge und Gefahren der Gelatine-Applikation. A. Bass. (Commenced in No. 21.)
41 (No. 23.) *Die Therapie der Cystitis. K. R. von Hofmann. Critical review of the literature.
42 (No. 24.) Die Coxa vara und ihre Beziehung zu inneren Krankheiten (its relation to internal diseases). D. G. Zesas. Critical review of the literature. (Commenced in No. 21.)
42½ *Die epiduralen Injektionen. Pelz. Critical review of the literature.

33. **Tendon Plastic Operations.**—The literature on this subject is small, although Nicoladoni proposed as early as 1881 the possibility of correcting paralyses by operating on the tendons. The different technic required for lengthening, shortening, transplanting or substituting the tendons is here described. The joint must be well balanced before the operation on the tendons is commenced. The results will be better the more circumscribed and partial the paralysis, and the greater the amount of functionally capable muscular tissue at disposal. The earlier the operation is undertaken the sooner the brain centers will adapt themselves to the new function, but the age of 4 is early enough, as paralytic phenomena occurring before this age frequently subside spontaneously. The improvement from the tendon operations in appropriate cases is so remarkable that even the most conservative practitioner must advocate them. Wittek has reported a case of spastic paraplegia with choreic athetosis in a child of 9. There was almost complete loss of voluntary movements, and the involuntary suggested chorea at times and athetosis at others. Some of the muscles showed vermicular contractions while others were in a condition of perpetual unrest. After failure of other measures he transplanted the musculature of the knee and performed tenotomy on the muscles of the hip joint. In three weeks the condition was much improved, the hips and thighs being freed from the involuntary movements while they persisted unmodified in the legs below the knee. The right leg had been immobilized for five weeks, the left for only nineteen days. The benefit gained by the tendon operations was probably due to the interposition of new centripetal stimuli which arrested the involuntary movements. The results observed in this and in other cases indicate that groups and parts of muscles, which we are accustomed to see working only together, under certain conditions can functionate separately. When a tendon is severed, each half can carry on the functions previously performed by the whole tendon. A large muscle is probably innervated from a number of cortical cells, and to educate them in the new function each half of the muscle should be stimulated separately with electricity, thus training these cortical cells to new ideas of movement in the region involved.

34. **Tabetic Arthropathy of the Spine.**—Frank summarizes 26 cases of tabetic arthropathy of the spine which he has found in the literature. Differentiation is difficult in the early stages, as the spinal affection may be the first symptom of the tabes. There is usually loss of the patellar and pupillary reflexes, and generally the lightning pains and sensory disturbances confirm the diagnosis. The coexistence of other arthropathies or of spontaneous fractures is an aid in diagnosis; this symptom is mentioned in all but 3 of the cases cited. In 2 patients all the joints were affected; in 3 the hip joint alone; in 4 the knee; in 2 the shoulder. In 2 there was crepitation in all the joints, and in 3 the teeth spontaneously dropped out. In one there was mal perforans and in another spontaneous fractures of the bones of both legs. Another typical feature of the affection under discussion is the sudden development of dorsolumbar kyphoscoliosis with or without slight trauma. The localization in the lumbar vertebræ aids the diagnosis essentially. Another important diagnostic point is that the deformity is generally long unnoticed by the patient and causes him no inconvenience or trouble of any kind. Another important sign of the affection is the new formation of bone on and around the affected vertebræ. Radioscopy of these growths is decisive, as it shows an unmistakable rarefaction of the spongiosa, loosening of the cortex and a partial formation of bony framework, evidences of fracture, etc., but especially the perivertebral ossification which occurs in proportions surpassing those of any other known affection. Differentiation from other neurogenous spinal affections is based on the other symptoms, and on the fact that the lumbar vertebræ are the usual seat of the affection. Arthritis deformans seldom attacks the spine; its course is extremely painful, and it is never so rapid or accompanied by so much ossification as the tabetic arthropathy. The latter causes no disturbances *per se*. Antisyphilitic treatment should always be instituted and orthopedic apparatus will render most valuable aid. Krönig has reported a case completely cured by it. He ascribes this success to the long immobilization in an orthopedic apparatus which allowed production of bridges of bone and ligament tissue, preventing the further subsidence of the vertebræ. The patient measured nearly an inch taller than before treatment. In a second similar case only slight improvement was obtained under the same treatment, and it proved a complete failure in a third. An orthopedic corset not only prevents further inroads of the deformity, but it may obviate it and may ward off mechanical injury of the spine, especially fracture. The apparatus may aid in counteracting the effects of the abnormal softness of the vertebræ.

35. **Surgical Treatment of Dilatation of the Stomach.**—Zesas summarizes the conclusions deduced from a review of 91 communications from various authors on this subject. He regards Bircher's operation as indicated in cases of idiopathic gastrectasia, while Heineck's pyloroplastics or gastroenterostomy —preferably by Roux' technic—should be the rule for surgical procedure in case of dilatation due to non-malignant stenosis. When the dilatation is due to malignant stenosis, gastroenterostomy is generally preferred, but the results will be better when physician and patient learn that far more favorable results are possible with resection of the cancerous pylorus. Resection of the pylorus is indicated only in case of cancer of the stomach, but here it deserves every consideration, and the physician should strive to make an early diagnosis and to persuade the patient to submit without delay to an operation which will spare him the torments of cancer. Zesas quotes in conclusion Penzoldt's appeal for the union of surgical "Können" with internal "Erkennen" as promising more for patients with a stomach trouble than for any other morbid condition.

36. **Operative Treatment of Cholelithiasis.**—Heusler summarizes and sifts 305 articles on this subject, his review including some from THE JOURNAL and several from Slavonian literature. Among the contraindications to surgical intervention Mikulicz accepts diabetes and carcinoma; Kehr regards diabetes, arteriosclerosis, chronic nephritis and lung and heart affections as turning the scale in favor of non-intervention. It has been pretty well established that the formation of gallstones occurs under the influence of bacteria in the gall bladder, but the virulence of the bacteria must have been attenuated and the gall bladder must have lost its contractility. The stagnation of the bile entails the chronic catarrh of the biliary passages, which is the chief factor in the production of the concrements, which form principally in the gall bladder. Primary stone formation in the biliary passages is very exceptional. After the operation, draining the gall bladder or hepatic duct renders the bile rapidly sterile, although the stones may still contain numerous germs. Ideal cholecystotomy is indicated only when asepsis and the permeability of the ducts are certain. It is rejected entirely by Kehr, Riedel and Robson and a few others, but Kocher, Kümmel, Tuffier and others champion it under the above conditions. The views of a number of prominent surgeons on the question of cystostomy or cystectomy are given in detail for comparison. Kehr's drainage of the hepatic duct is considered one of the main advances in the surgical treatment of cholelithiasis in late years. It is contraindicated in case of acute occlusion of the common

bile duct—in which no operation should be attempted—and also in acute suppurative cholecystitis on account of the danger of spreading the infection. It is also contraindicated when the narcosis is defective and when the patient becomes cyanotic, etc. Cosh, Ewald, Ferguson and Quénu have unconditionally adopted Kehr's technic for drainage of the bile duct. Garré and Robson apply it only in exceptional cases, principally in cases of contracted gall bladder or of chronic induration of the head of the pancreas. The latter is liable to retrogress afterward. Enteroanastomosis has given good permanent results. Radsiewsky's conclusions from study of 56 cases of artificial gall bladder-intestine fistulæ and experimental research show that such a fistula entails dilatation of the biliary passages, hypertrophy of the walls of the gall bladder, new formation of lymph follicles in the hypertrophied mucosa, penetration of microbes far into the liver, and evidences of desquamating catarrh of the bile apparatus. Other factors are necessary for the development of infection from this source in the bile apparatus, predominant among these factors being stagnation of the contents of the biliary passages.

38. **Surgery in Pregnancy, Especially on Account of Internal Affections.**—Fellner epitomizes 519 articles on this subject, grouping the cases on record according to the internal affection. Appendicitis is liable to be particularly serious in a pregnant woman. The results were better when the appendicitis was operated on during the puerperium. The prognosis is better the earlier the operation is undertaken; it is bad when the operation is followed at once by delivery, and absolutely bad when delivery follows a mere incision. Intervention should be postponed, therefore, when there are signs that childbirth is at hand. A radical operation is indicated even more strictly than outside of pregnancy. General experience seems to show that pregnancy affords a predisposition to the severer forms of appendicitis. Every mild catarrhal appendicitis should be regarded with suspicion and be operated on early in the pregnancy. Bilateral ovariotomy did not affect the pregnancy in four-fifths of the cases. The proportion in which unilateral operations on the ovaries were followed by interruption of the pregnancy amounted to 21.6 per cent. On the whole, the literature shows that as a rule surgical intervention does not interrupt the pregnancy unless the nerve centers that preside over the contractions of the uterus are abnormally excitable or are already excited.

39. **Surgical Treatment of Chronic Inflammatory Processes in the Large Intestine.**—Herman ascribes to Folet, 1885, the first intervention of this kind. He was followed in 1887 by Durante, whose patient was completely cured by the formation of an artificial anus above the left inguinal region and irrigation of the intestine through the fistula with a 1 per 1,000 zinc chlorid or 1 per cent. zinc sulphate solution. The trouble had been a diffuse ulcerative process in the colon and rectum, the first symptoms having been noted seven years previously. Then followed the work of the Americans and Germans in this line, the communications of Sullivan, Summers and Smythe being published in THE JOURNAL, 1900 and 1903. Herman has found 50 cases on record, and in an extensive table gives the various particulars regarding technic, age, results, etc. One patient was less than 10; 2 were between 11 and 20; but the majority were between 20 and 40; only 2 over this age, and two-thirds of the patients were men. The intestinal affection had lasted for less than a year in 12 patients; from one to two years in 7; from seven to eight years in 1, and from thirteen to fourteen years in another. The duration was not mentioned in 18 of the published cases. All the patients had been under internal treatment for a long time without results. In 17 cases the diagnosis was chronic dysentery, and in 11 of these there was a history of residence in a tropical climate. In 23 cases the diagnosis was ulcerative colitis; no tubercle bacilli were discoverable. None of the reports mentions whether search was made for syphilis or gonorrhea in these cases, and yet colitis of this origin occurs frequently with an ulcerative course. In the majority of the cases, however, there was no mention of the secondary constriction of the rectum which is such a frequent sequel to syphilitic or gonorrheal colitis or proctitis. He thinks that we may regard the venereal affections as excluded in these cases. In 2 patients the diagnosis had been membranous colitis, and in 1 each, polypous, tuberculous and acute colitis. In 24 cases complete recovery followed the intervention, and was probable in 6 more, bringing the total of recoveries to 60 per cent. In 12 cases improvement was marked, but some minor symptoms still persisted; these patients survived for years, Ewald's for six. Three patients did not appear to derive any benefit from the operative treatment, and 6 succumbed soon after the operation: 2 from progressive cachexia, 1 from hemorrhage from an intestinal ulcer, 1 from incarceration of a diverticulum made by the operation, and 1 from peritonitis by perforation of the intestine at the point of union with a Murphy button. The after-treatment almost always included medicinal rinsing of the peripheral section of the intestine from the anus to the fistula or the reverse. Various drugs were used for this purpose. In some of the cases followed by recovery boric acid or bismuth, silver nitrate or tannic acid were used: in others, quinin, methylene blue, formaldehyd, silver nitrate. From his study of the subject Herman concludes that surgical intervention is justified in obstinate threatening forms of chronic intestinal catarrh (colitis), and in tuberculous colitis. As it is impossible to tell beforehand how high the pathologic condition extends, the opening into the intestine should be made in the cecum. As the main point in treatment is the resting of the diseased organ, the opening into the cecum should be an actual artificial anus. The technic should be the simplest possible for two important reasons: 1, Because such patients are always debilitated and their resisting powers at a low ebb, the operation should be done without general narcosis and as rapidly as possible; 2, because the intention is to close the artificial anus after a few months, as soon as the inflammatory process has completely healed. Herman cites various authorities to prove that the large intestine can be excluded without the slightest harm to the organism, its functional importance being trifling in man, so that it can easily be dispensed with.

40. **Results and Dangers of Gelatin in Therapeutics.**—Bass marshals an array of new facts learned from recent experimental research on the action of gelatin injected subcutaneously or into a vein. Among them we note Gebele's conclusion that the amount of the previous loss of blood is the key to the varying action of the gelatin. The greater the loss of blood the greater its coagulability, and the more rapidly the gelatin is taken up. Strusberg has been studying on animals whether nephritis is a contraindication to the use of gelatin, as many writers maintain. His results show that the diseased kidney in animals is permeable for gelatin injected subcutaneously (biuret reaction), if the gelatin is pure. Impure gelatin seriously injures the convoluted tubules. Steensma's experimental researches have confirmed the assumption that the effective factor in the action of gelatin is its lime content. Moll is convinced that the gelatin increases the amount of fibrinogen and also induces agglutination of the red corpuscles. He suggests prophylactic injections of gelatin a few days before operations in which much hemorrhage is to be feared. He also advises performing the operation at the height of the digestive leucocytosis, on account of the parallelism which he has observed between the proportion of fibrinogen and the number of the leucocytes. Kaposi's experiments are also instructive. Extract of leeches has the property of rendering the blood incoagulable, but if gelatin be injected subcutaneously it fails to display this property. About 147 cases of the clinical application of gelatin in the treatment of aneurism have been reported. Dropping 21 as not sufficiently authentic, out of the remaining 126 cases favorable results were obtained in 61 cases while the treatment failed in 65. The autopsy findings confirm the actual benefit derived from the gelatin in many cases of aneurism. Gelatin has also established its usefulness in hemoptysis, in hemorrhage from the stomach or intestines, in melena neonatorum, in the hemorrhages of hemophiliacs, in rheumatic purpura, in a few

cases of hemorrhage in the kidneys or bladder, and in one case of cerebral hemorrhage. Kidney affections are not an absolute contraindication if an absolutely pure preparation can be obtained. The occasional disagreeable by-effects—fever, pains and infiltration—are transient. Painfulness is avoided to a great extent by the use of a neutralized solution. Danger of tetanus infection can be averted by sterilizing the gelatin by any reliable method. When a reliable, sterile solution is not at hand, rectal injection of a concentrated solution can be substituted for subcutaneous administration. There has been little change in the technic since the first publications on the subject. Gelatin therapy can be regarded now as having been firmly established on a scientific basis by a series of experimental researches above criticism. One hundred articles that have appeared on the subject since 1900 are reviewed.

41. **Treatment of Cystitis.**—The experiences with prophylactic measures and various drugs in the treatment of cystitis, as published in 147 communications in the literature, are summarily reviewed and classified in this article. The results of the permanent catheter have been so excellent in many instances that its value should be more generally appreciated as Feleki has recently affirmed anew. In tuberculous cystitis Rörig obtained a cure in the case of a woman of 38 who had complained for ten months of pollakiuria, abnormal desire to urinate, and pains. An ulceration was found in the bladder, but the area around the openings of the ureters was apparently healthy. Instillation of corrosive sublimate induced merely slight improvement. He gave Klebs' tuberculocidin by the mouth, commencing with 5 drops and increasing to 40, and improvement was soon manifest. The corrosive sublimate instillations were continued and, finally, 5 gm. of tuberculocidin were injected twice into the empty bladder. The capacity of the organ increased from 60 to 350 c.c. during the course of three months, the general health improved and the urine became normal. Krüger has also reported good results from the use of tuberculocidin and selenin in 3 tuberculous cases. Duhot has also published cases favorably influenced by daily instillation of some of the newer drugs. Casper advocates local treatment with corrosive sublimate, but prefers rinsing the bladder to mere instillation. He commences with instilling a 1-10,000 corrosive sublimate solution and then gradually changes to rinsing with a solution of 1-10,000 and 1-5,000. The fluid is retained in the bladder as long as can be done without pain, and the amount never surpasses 50 c.c. Other authors advocate more radical procedures. Desnos thinks that the bladder should be opened in case of retention of urine or of intense pains induced by contraction of the bladder musculature. He does not think that much is gained by removal of the tuberculous foci. The favorable results that may follow cystostomy are corroborated by Bandler's case, published in 1903. His patient was a young man with tuberculosis of the bladder, accompanied by intense pains and tenesmus. No improvement was obtained by instillations, the patient becoming more and more debilitated and seeking relief in morphin. Suprapubic cystotomy was then done, and the patient unexpectedly recovered. The fistula had to be left open, as pains recurred at every attempt to close it. The urine is clear and contains no traces of pus or bacilli. Preindlsberger, in 1903, also reported a case of tuberculous cystitis cured by suprapubic incision. Saxtorph advocates combination of suprapubic incision with extirpation of the tuberculous foci.

42½. **Epidural Injections.**—Forty-three articles have been published on this subject, which Pelz reviews. Cathelin has made these epidural injections in more than 1,000 cases and Kapsammer in more than 300, and no by-effects have been reported by any one except rapidly transient subjective disturbances and slight vomiting in exceptional instances. The absolute harmlessness of the method of "epiduralization"—to use the term Pelz has coined—seems to be fully established. The most important indications for its use are painful affections of the lower half of the trunk, especially neuralgia and incontinence of urine. The results in incontinence have been 49 per cent. cured, 35 materially improved, and 4 per cent. failures. The number of cases of affections in the sexual sphere treated by epidural injections is too small for definite conclusions as yet. For the technic see abstracts in THE JOURNAL of Kapsammer's, Cathelin's and other communications on the subject since 1901.

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43 (XVIII, No. 48, November 20.) *Zur Exstirpation von Neoplasmen der Tonsille. J. Preindlsberger.
44 *Die Gravidität vom biologischen und pathologischen Standpunkte. J. Neumann. (Concluded.)
45 *Zur Kenntnis der akute-infektiösen primären Prozesse im Pharynx und Larynx. F. Hutter. (Concluded.)
46 (No. 49.) Zur Histogenese der Ureteritis und Cystitis cystica. A. Hofmann.
47 *Imitatorische Krankheiten (affections). A. Kühner.
48 (No. 50.) Karl Stellwag von Carion. Obituary. Schnabel.
49 (No. 52.) *Influence of Emboli on Temperature.—Ueber den Einfluss der Embolien auf die Körpertemperatur. J. Hnatek. (Commenced in No. 50.)
50 *Die dorsale Auskultation des Herzens und ihre diagnostische Bedeutung. W. Libensky.
51 (XIX, No. 1, January 8.) 3 Fälle von leichten Verletzungen im Halse (slight injuries in throat). J. Fein.
52 First Changes in Albumin Undergoing Absorption in Alimentary Canal.—Ersten Veränderungen des in Resorption befindlichen Nahrungseiweisses. E. Freund.
53 Heredity of Sclerosis of Middle Ear.—Vererbbarkeit der Otosklerose. V. Hammerschlag (Vienna).
54 (No. 3.) *Das Moskito-Fieber (fever). K. Steiner.
55 *Ueber Tuberculoma coli und Kolon-Operationen. Winselmann. (Commenced in No. 2.)
56 *Morbid Symptoms from Sympathetic Apparatus.—Krankheitserscheinungen von seiten des Sympathicus. E. Hönck (Hamburg). (Commenced in No. 2.)

43. **Extirpation of Neoplasms in the Tonsils.**—A cancer was removed in the case described by obtaining access to the pharynx from without, about half the width of the lower jaw being resected at the point of the angle. The flap of jaw thus resected formed a triangular piece. The angle of the jaw formed the broad tip, while the base of the triangle extended high on the ascending ramus and almost to the teeth on the horizontal part. This did not interfere with the use of the jaw later, while it much facilitated pharyngotomy from the side.

44. **Pregnancy from Biologic and Pathologic Standpoints.**—Neumann's article is especially instructive from the personal experiences related. In a few instances histologic examination revealed a reason for the fatal postpartum hemorrhage. In some cases the placenta was so closely attached to the wall of the uterus that it was impossible to detach it, and in places there was no trace of a decidua serotina. The villi had grown directly into the sinuses in the uterine wall whence it was impossible to loosen them, while their presence in the vessels prevented the latter from closing. He has observed a similar partial absence of the decidua in cases of malignant chorioepithelioma. The fetus in the uterus is like a parasite, and especially so in these rare cases in which the nutrient organs of the ovum penetrate directly into the maternal tissue. The ovum in these latter cases is abnormal, and signs of malignant degeneration can invariably be found in it. The ovum or certain of its cellular elements may lead to malignant new growth, and this must not be forgotten in the consideration of pregnancy.

45. **Fulminating Gangrenous Processes in Throat.**—Hutter describes a few cases of acute primary infectious processes in the pharynx and larynx, fatal in two, three or seven days. Death seemed to be due to toxic paralysis of the heart. The patients were betwen 30 and 50 years old. Only one case of recovery is known, but it probably occurs oftener, as the favorable outcome causes physicians to doubt the accuracy of their diagnosis. The inflammation shows a fibrinous and necrotic tendency. The propagation of the septic process along the large blood vessels is a dreaded feature of these phlegmonous throat affections.

47. **Imitation in Nervous Affections.**—Kühner mentions among his other examples of the spread of nervous affections by imitation the "plague of hiccoughing" in the Moravian towns of Nikolsburg and Lunenburg. Women and children were affected, not the men, and the epidemic lasted for months and even required the closing of the schools. He has recently observed another epidemic of imitation in a village where the

girls cut off their braids, claiming that they had been robbed of their tresses by some assailant.

49. **Influence of Emboli on Temperature.**—Hnatek injected starch or introduced various foreign bodies, beads, a rough wire or other irritating article, into the jugular or some other vein in dogs, thus artificially inducing embolism. Among the points learned from these experiments is the fact that irritation of the endocardium lowers the temperature. Irritation of the endocardium reduces the blood pressure and this in turn lowers the temperature. This explains why an embolus in the pulmonary artery is sometimes accompanied by fever and sometimes not. The apyretic cases are those accompanied by irritation of the endocardium. Ten or more small beads were introduced into the jugular vein in one dog and the temperature rose at once several degrees (from 37.7 to 39.2 C.). The beads were found in the lung, but no evidences of an inflammatory process could be discovered when the animal was killed. The introduction of a rough wire into the femoral vein raised the temperature in the same way and even higher. Scraps of sponge introduced into the jugular vein had a similar effect. The temperature invariably rose when embolism was induced, but it invariably fell when a glass rod was introduced into the heart or the endocardium was irritated by other means. This invariable result of irritation of the endocardium explains the discrepancies in the results obtained by other investigators who overlooked this factor.

50. **Auscultation of the Heart from the Rear.**—Libensky discovered that in certain patients with valvular affections the auscultation findings were most distinct at a certain point in the back. As the right ventricle hypertrophies the apex and the left ventricle are pushed backward and away from the front wall of the chest. This brings them closer to the rear wall, and the auscultation findings are louder the greater the enlargement of the right ventricle. The apex is twisted around in these conditions, nearer the back than the front wall, as might possibly be determined by radioscopy from the left axilla. Dorsal auscultation is best controlled and aided by laying the hand over the region of the apex beat in front. He analyzes his material, which includes 22 cases of insufficiency of the semilunar aortic valves and a large number of mitral defects. The results show that differential diagnosis between defects of the mitral and semilunar valves is possible by the findings of dorsal auscultation. In case of a defect in the mitral valve the finding is always loudest at the lower angle of the left scapula. The cases with remarkably loud findings at this point were always accompanied by extensive transverse increase in the dullness, reaching in some to the left axillary line. In these extreme cases the heart beat was diffuse, and the percussion findings and the accentuation of the pulmonic sound were always more or less vague. These facts, with others which he cites, suggest that the trouble is due to extreme dilatation of the right ventricle, which twists the apex around and pushes the left ventricle back from the front wall of the chest. The autopsy findings confirmed this assumption. The auscultation findings at the left angle of the scapula are louder the greater the enlargement of the right side of the heart. The prognosis is, therefore, more serious the louder the findings at this point. They indicate some defect in the left auriculo-ventricular opening. The maximum of intensity of the sounds is at a different point when the semilunar aortic valves are involved. The dorsal findings are loudest in this case at the left supraspinous fossa, and toward the right and downward to the third dorsal spinous process. The findings are not very distinct in incipient cases, but, even then, as completely negative findings at the angle of the left scapula exclude a mitral defect, the trouble can be referred only to the aortic valves. Dorsal auscultation enables the organic to be differentiated from the accidental murmurs. He is now making a study of dorsal auscultation in cases of endocarditis and aneurisms.

54. **"Mosquito Fever."**—Steiner describes an acute febrile disease which attacks unacclimated subjects in Herzegovina with the onset of the mosquito season. The patient feels very sick for from six to eight hours, with intense frontal headache, depression, vertigo, thirst and possibly nausea. The temperature gradually rises to about 104 F. and remains high for from one to three days, after which it subsides with a crisis or more gradually to normal. The disease is called "dog-sickness" (Hundskrankheit) by the natives. It leaves the subjects permanently immune. It can be avoided by protection against mosquito bites, but otherwise it is a much dreaded accompaniment of a stay in this region.

55. **Operations on the Colon.**—Winselmann operated on a woman with cancer of the ascending colon by exclusion of the entire colon. The results were highly satisfactory. The rectum soon adapted itself to the new conditions and the stools were apparently normal after a few days. The patient lived for six months in comparatively good condition. He has been encouraged by this result to propose resection of different parts of the colon at need, and describes the various indications and the technic by which the eventualities to be feared are averted. The disadvantages of an artificial anus or other fistula are avoided by simply making a total exclusion of the colon on one side with consecutive ileosigmoid anastomosis. The rectum soon adapts itself to the contents arriving from the small intestine, while the intestinal secretions and the discharge from the cancer in the colon empty downward according to their natural course. The growth of the cancer is liable to be checked for a time when thus put at rest; the patient feels comparatively well, and there is no artificial anus to annoy him. The fear that exclusion of the colon would prove too radical a procedure has deterred many from this simple and effectual operation, but this fear can now be abandoned. It might be possible to apply this technic of unilateral exclusion of the colon and ileosigmoid enteroanastomosis to extensive affections involving the mucosa, such as tuberculosis, dysentery, syphilis or actinomycosis. By diverting the course of the feces and by resting the entire colon in this way, a cure might be possible. He proposes to try this technic in the next case of Hirschsprung's disease that he encounters. After exclusion of the colon and after ileosigmoid enteroanastomosis in the rectal part of the flexure, he would leave the chronic volvulus of the iliac flexure, causing the trouble, to take care of itself. It would probably shrivel. In an invagination tumor he would proceed in the same way, severing the ileum and making an anastomosis between its central part and the sigmoid flexure. The peripheral end would be merely sutured, pushed down into the invaginating funnel and this sutured in turn. The secretions and any cast-off part would be eliminated by the natural route.

56. **Morbid Symptoms from Sympathetic Apparatus.**—Hönck has long noted that he was able to elicit pain on pressure of the plexuses of the abdominal sympathetic system in many cases in which there was no history of a preceding inflammation. He is convinced that the sympathetic can be the source of pains occurring suddenly after emotions and excitements of all kinds, or developing more slowly after any exhausting exertion or disease. The pains may occur following inflammation in any of the organs innervated by the sympathetic. Not only pains, but secretory, vasomotor and motor phenomena may be observed in the most diverse parts of the body, all due to the influence of the sympathetic, as, for instance, the increased sugar and uric acid, oxaluria and phosphaturia sometimes observed in neurasthenics. These phenomena are undoubtedly due to the intermediation of the sympathetic. The painfulness of the sympathetic during tonsillitis is a phenomenon which has frequently attracted his attention. In 2 cases recently he was summoned to see 2 boys on account of severe pains in the region of the left lower ribs. The entire abdominal sympathetic was sensitive to pressure. There were no other symptoms except a mild, febrile tonsillitis which rapidly subsided. There were no pains in the throat but the number of sympathetic fibers in that region justifies the assumption that the pains in these cases were radiations from the diseased tonsils into the sympathetic. A similar assumption might explain the "genital points" in the nose.

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57 (XXV, No. 131, November 1.) Physico-Chemistry in Its Relation to Clinical Medicine. Ceconi (Turin).
58-60 (No. 134.) *Report of Italian Congress of Internal Medicine, Rome, Oct. 24-27, 1904. (Continued.)
61 (No. 133.) Sul decorso della pseudo-tubercolosi per ingestione del bacillo opale agliaceo nelle cavie di pochi giorni (experimental research on young guinea-pigs). L. Vincenzi.
62 Sull' ematemesi nei morbi splenici. G. Cabibbe.
63 Sull' importanza dell' esame oftalmoscopico nei traumi della scatola cranica (ophthalmoscopy in injuries of skull). A. Carbone.
64 Enlarged Spleen in Typhoid, Etc.—Il tumore di milza nell'ileotifo e nella subcontinua malarica. T. Rodini.
65 Del parto forzato nell' eclampsia. E. Curti.
66 Le iniezioni dei sali mercuriali nelle tubercolosi chirurgische (negative action of salts of mercury). E. Curti.
67 Di alcuni casi di dissenteria e della loro cura col creosoto. G. Zanardini.
68 (No. 136.) Sopra le alterazioni cardio-polmonari che si riscontrani nella cifoscoliosi (kyphoscoliosis). A. Pisani.
69 Cheratoma plantare e bilaterale ereditario. M. Costanzo.
70 *Action of Muscle Plasm of Immunized Animals, Etc.—Azione del plasma muscolare di animali sani ed immunizzati sul bacillo di Koch. R. B. Pallieri.
71 Adrenalina. E. Bosurgi.
72 (No. 139.) *Fenomeni cardiaci nella malaria. P. Gallenga (Baccelli's clinic, Rome).
73 *Carattere e significato clinico della bozza pilorica (bulging of pyloric region). S. Mircoli.
74 (No. 139.) Anestesia locale adrenalin-cocainica. G. Gualdrini.
75 (No. 142.) Ricerche sul potere agglutinante, emolitico e tossico del siero di sangue nell' anchilostomanemia. D. Romani.
76 *Opoterapia gastrica. U. Baccarani (Galvagni's clinic, Modena).
77 Defensive Action of Antiserum in Acute Experimental Tuberculosis.—Infezione tubercolare acutissima ed azione difensiva del siero. E. Marzagalli.
78 Two-way Tip Attachment for Bladder Irrigation with Permanent Syringe.—Di uno strumento da applicarsi alla siringa a permanenza per fare le lavande vescicali a doppia corrente. G. Baroni (Arezzo).

59. **Studies of Infants Fed with Milk from Immunized Cows.**—Jemma reports that the serum of healthy infants of sound parents does not agglutinate the tubercle bacillus even at a dilution of 1 to 1. If the parents are tuberculous a very weak agglutination is exceptionally observed. Healthy infants fed for several months with milk from immunized cows, acquire the agglutinating property, usually for dilutions of 1 to 5, but occasionally of 1 to 10. Infants of tuberculous parents, under the same conditions, acquire an agglutinating property of 1 to 10 or 1 to 20. This property is gradually lost after suspension of the milk, persisting highest and longest in the children of tuberculous parents.

60. **New Research on the Protecting Functions of the Omentum.**—Cioffi's experiments have established the remarkable protecting action of the omentum. It rapidly encloses an organ or part of an organ tied off, and displays both antitoxic and other functions. The circulation is soon re-established through the parts and no damage results from the intervention. He here reports that a silk ligature thrown around the large intestine of rabbits so as to arrest the circulation was found inside the intestine in five or six days in 10 out of his 15 experiments. The peritoneum clings to the injured loop, adhesions form, and by the time the silk has made its way through the walls of the intestine, the adhesions have closed its path behind it so that no fecal matter escapes from the intestine. The sheet of the peritoneum is the first to become organized, with intense local hyperleucocytosis, while the crowds of leucocytes attracted to the submucous connective tissue combine with those of the peritoneum to form a tissue that repairs the breach.

70. **Bactericidal Action of Muscle Plasm from Immunized Animals.**—Pallieri describes a number of experiments which demonstrated that the muscle plasm of animals artificially immunized against tuberculosis possessed bactericidal and antitoxic properties in respect to the tubercle bacillus. The research was conducted at Maragliano's Institute for Infectious Diseases at Genoa.

72. **Heart Symptoms in Malaria.**—Gallenga emphasizes the necessity for suitable treatment of the heart symptoms accompanying some cases of malaria. A malarial patient who presents heart symptoms such as he describes should be regarded and treated as if he were just recovering from endocarditis. The quinin should be given cautiously in such cases, avoiding large doses and too short intervals. He advises giving not more than from 2 to 3 gm. in twenty-four hours, and this amount may be given hypodermically in doses of .5 gm. every three hours. The effect is as good as with larger doses, while it is less dangerous. Digitalis and other heart tonics are given as indicated. The 3 typical cases suggested the onset of an acute infectious endocarditis or myocarditis. None of the classic symptoms were wanting; the malarial infection must have had an elective and intense action on the heart, especially on the contractile function of the myocardium, as evidenced by the dilatation of the ventricles, functional mitral incompetency and threatened heart failure. The malarial infection was mild and soon yielded to quinin, but the heart symptoms persisted for some time longer, but finally subsided. In other cases the heart symptoms were less serious, but the malarial infection proved less tractable.

73. **Bulging of Pyloric Region.**—Mircoli applies the term of pyloric bulging to the condition in which the fasting stomach bulges out in the epigastrium, or its margin is lower than normal, below the level of any other part of the greater curvature. It may occur with or without pain or lesions in the stomach, and may be transient or permanent. This bulging of the pyloric region may be the initial sign of incipient gastrectasia. In 10 cases this bulging of the pyloric region was the only appreciable sign of any stomach trouble, and the patients complained merely of neurasthenic symptoms. They were all persons obliged to bend over at work or exposed to great heat, cooks, bookkeepers, or else were in the habit of always sleeping on the right side. In 2 cases of biliary or lead colic the bulging was marked during the paroxysms, but subsided later. In another group of patients with heart disease the bulging was accompanied by subjective disturbances. In the cases of liver affections the bulging was particularly prominent, as also in some cases of malaria.

76. **Natural Gastric Juice in Dyspepsia.**—Baccarani has been using in the clinic the gastric juice obtained by a Pawlow fistula from pigs. He found that in the majority of cases the gastric juice effected a prompt and complete cure and that notable improvement occurred in cases in which the gastric disturbances were due to hysteria or neurasthenia, or to nervous anomalies of any kind. The benefits obtained persisted long after suspension of the treatment, the intestinal functions also returning to normal. Great benefit was also derived in cases of gastrointestinal atony, accompanied by hypoacidity or catarrh. The patients with more serious gastric disturbances were not benefited to the same extent as those of the above two categories.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A HANDBOOK ON THE PREVENTION OF TUBERCULOSIS. Being the First Annual Report of the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the City of New York. Paper. Pp. 388. Published by the Charity Organization Society, New York City. 1903.

STUDIES IN GENERAL PHYSIOLOGY. By Jacques Loeb, Professor of Physiology in the University of California. The Decennial Publications. Second Series. Vol. XV. Parts 1 and 2. Cloth. Pp. 782. Price, $7.50 net. Chicago: The University of Chicago Press. 1905.

FIRST ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE for the Study, Treatment and Prevention of Tuberculosis. Feb. 1, 1903, to Feb. 1, 1904. Paper. Pp. 265. Published by the Henry Phipps Institute, 238 Pine St., Philadelphia. 1905.

THE CAUSE AND PREVENTION OF CONSUMPTION. A Preventable and Curable Disease. Circular Issued by the Illinois State Board of Health, 1904-5. Fourth Revised Edition. Pp. 26.

NOTES FOR THE GUIDANCE OF AUTHORS in the Submission of Manuscripts to Publishers. Paper. Pp. 66. Price, 25 cents. New York: The Macmillan Co. 1905.

TWENTY-FIRST ANNUAL REPORT OF THE KENSINGTON HOSPITAL FOR WOMEN. From Oct. 12, 1903, to Oct. 3, 1904. Paper. Pp. 31.

POLITICS IN NEW ZEALAND. Paper. Price, 25 cents. Published by C. F. Taylor, M.D., 1520 Chestnut St., Philadelphia.